Attachment J-1
Performance Work Statement

For

Information Management and Communications Support (IMCS)

CONTRACT OVERVIEW

The Information Management and Communications Support (IMCS) contract is the Center's primary provider of information technology and communication services for the Kennedy Space Center (KSC). KSC encompasses over 140,000 acres of which 15,000 acres are populated by approximately 15,000 civil servants and contractor employees. IMCS services are delivered to locations across the entire geographical area. Additionally, services are provided to NASA occupied facilities at Cape Canaveral Air Force Station (CCAFS), various facilities near KSC and other locations as specified in the contract.

This contract will deliver products and services to multiple National Aeronautics and Space Administration (NASA) programs, the Department of Defense (DoD), contractors, academia, other Government agencies, world-wide news media organizations, and varied space related industry entities. The services provided by IMCS include voice, imaging, and data communications; server operations; application and web development; writing, printing, publishing, and reproduction; and library management to customers at KSC, CCAFS, and off-site locations. The contractor shall plan, design, implement, maintain, operate, sustain, and provide life cycle management for these products and services to ensure the highest availability, integrity, and security.

The contractor will be expected to employ technology to increase Center and information technology (IT) capabilities and to improve operating efficiency. The goals associated with this effort are efficient service delivery, responsiveness to customer requirements, flexibility to the changing environment, high levels of customer service and satisfaction, and highly reliable, quality systems to support launch and mission readiness, as well as day-to-day operational support for multiple concurrent users.

The products and services that will be required under the IMCS contract are described in the Performance Work Statement (PWS). Offerors are not required to propose an organizational structure that strictly reflects the PWS structure, but may identify cross-cutting functions and synergies among the different functional areas of the PWS that will increase the efficiency of its organizational structure.

During the contract performance period, the composition of NASA's mission and budget may change significantly. It is expected that the contractor will have the flexibility to remain responsive to contract requirements resulting from such changes.

1.0 MANAGEMENT SUPPORT

The contractor is responsible for Management Support which includes all business and management functions necessary to execute and administer the IMCS contract in compliance with applicable Federal and state laws; and Federal and Agency regulations, Agency CIO initiatives, requirements, standards, policies, and procedures including the documents specified in Appendix 4 – Applicable Policies and Procedures.

In performance of this contract, the contractor shall:

a. Accomplish the management and technical control of all resources required to fulfill the requirements of this contract. The contractor shall be accountable for the quality and timeliness of the supplies, services, and Indefinite Delivery/Indefinite Quantity (ID/IQ) efforts under this contract.

b. Examine technological services to consolidate work efforts, eliminate duplication of effort, and reduce operational cost. Make trade-off recommendations to the Government for new or changing requirements to avoid cost impacts.

c. Provide a management team focused on proactively integrating and optimizing across all PWS elements to ensure excellent performance.

d. Provide innovative and effective approaches that reduce the cost of technological services while maintaining technical excellence within manageable levels of risk.

e. Provide the resources necessary to accomplish surges in customer requirements during special testing, operations, launch manning activities, and performing ID/IQ tasks while continuing to perform baseline activities.

f. Provide a Management Plan (Data Requirement Description (DRD)-MS-01) which shall be submitted and approved by the Contracting Officer (CO) and the Contracting Officer Technical Representative (COTR).

g. Define and implement project controls for managing changes to the overall contract cost and schedule.

h. Provide the Government with a quarterly IMCS management review, which includes, at a minimum, financial status (by customer and WBS), indirect rate reviews and contract cost forecast (with estimate to complete), cost savings and cost avoidance initiatives, systems status, project status, risk management/planning status, changes to organization and subcontractor agreements, performance metrics, and safety and health data.

i. Establish and provide a performance measurement system containing, at a minimum, performance metrics, workload indicators and metric history, and planned work with on-line access by the Government.

j. Provide the CO, COTR, and other designated personnel unrestricted on-line access to systems and data generated in the performance of this contract and utilize web-based interfaces whenever possible. This includes the capability for ad-hoc query of the data in these systems. The Government may require specific data on various reports.

DRDs Referenced in this Section:

Management Plan, DRD-MS-01

1.1 Phase-In/Phase-Out

The contractor shall develop and implement a phase-in plan which defines the contractor's approach to transitioning all management and technical services from the incumbent contractors while minimizing operational impacts to center customers. The phase-in plan shall address partnering with the incumbents and provide a time estimate for implementation. The contractor shall coordinate and lead the transition status meetings with the Government and incumbent contractors' participation. The meetings shall be held at a minimum of once per week to discuss phase-in status and issues. The phase-in period shall be performed within 90 calendar days prior to contract start. During phase in, the contractor shall modify the Government-furnished Maximo work control system to establish workflows, screens, and reports as necessary to perform work associated with this contract. The contractor will work with the Government and incumbent contractors to migrate existing data in legacy work control systems to the Government-furnished Maximo work control system. Final data migration shall occur such that no information is lost at contract transition. The contractor shall establish the necessary interfaces with its financial and time card systems to transmit hours and cost into Government-furnished Maximo work control system by the end of the phase-in period**.** The contractor shall establish and implement a customer outreach strategy to communicate processes and procedures for receiving IMCS services.

The contractor shall support the succeeding contractor during the IMCS contract phase-out period. This support includes the transition of all management and technical services to the successor contractor while minimizing operational impacts.

1.2 Financial Management

The contractor shall perform all business and financial functions and integrate these functions across all areas of performance. The contractor shall provide on-going business analysis and respond to requests and inquiries from the Government relating to budget, schedule, work year equivalents (WYE), cost plans, and cost performance.

The contractor shall develop, implement, update, and maintain an integrated financial management system for planning, tracking, compiling, and reporting contract costs. The financial management system shall be capable of tracking the following types of items: expenditures, workforce utilization, elements of cost, labor hours, other direct cost (ODC), contractor and subcontractor data, headcounts (WYEs), indirect cost (i.e., fringe benefits, overhead, General and Administrative (G&A)), and any other indirect expense, and fee. The data in the system shall be identifiable by Government specified customers' unique fund sources, and Work Breakdown Structure (WBS) as defined in Appendix 14, work order numbers or unique project identifiers. The contractor's financial management system shall be fully integrated with the Government-furnished work control system and capable of maintaining cost integrity. The financial management system and Government-furnished work control system shall have automated data transfer capability. The system shall be structured to provide projections and tracking of negotiated, accrued, and actual costs by individual cost elements by customer fund source (including labor hours) and by WBS elements at any level, major functional category, specific project, organization, facility, and timeframe.

The contractor shall provide an automated, network accessible, ad hoc query capability to permit specific Government users, as identified by the CO, access to determine the cost, schedule, and status of work at the level of detail reported in individual work orders, specific customers, unique projects, WBS, and NASA Form (NF) 533 reports. The system shall be flexible to ensure compliance with the variety of cost charging and reporting requirements of NASA based on category of customer and sources of funds. The system shall be capable of generating Earned Value Management reports for larger projects when specified in the Task Order.

The contractor's cost accounting system shall have adequate internal checks, balances, and audit steps to isolate and identify erroneous or incomplete data and procedural deviations. The contractor shall notify the Government immediately upon detection of significant errors in their accounting system that impact work and/or costs reported in any given period.

The contractor shall provide necessary financial support required by the Government to meet the budgeting, cost reporting, billing, and disclosure requirements of the contract. The contractor shall develop, recommend, and implement innovative approaches consistent with Government regulations that support and expedite the financial management of the contract.

The contractor shall develop and implement a rolling Five-Year Technical and Cost Plan (DRD-MS-02) to define planned work and estimate the cost of work to be performed or planned during the subsequent five years. The contractor shall submit the operating budget in support of the Program, Planning and Budget Execution (PPBE) annually as specified in DRD-MS-02.

The contractor shall support cost impact assessment of requirements changes, hardware modifications or upgrades, special studies, and Task Order ID/IQ support. Requests involving ID/IQ cost estimates shall be addressed and provided to the Government within 10 working days. Requests for deviations may be submitted to the CO for review and approval.

The contractor shall support the Government's PPBE schedule and shall develop and provide financial data for the following: PPBE, IT Investments, IT Reinvestments, Chief Information Officer (CIO) Initiatives, Program Resources Guidance, Strategic Institutional Investments, other strategic planning requirements, and other Agency budget planning activities. The format and content of the contractor's inputs and supporting rationale shall be in accordance with the budget or special request guidelines and formats specified by the Government. These requests may occur throughout the FY. The contractor shall conduct Monthly Financial Review(s), as required, within 15 working days after the close of the reporting month to provide the Government insight into contract cost and workforce utilization. The contractor shall provide accurate expenditures and forecasts of labor, non-labor, and workforce utilization by customer. The contractor shall develop and recommend cost and workforce utilization metrics, including trend analysis, to the Government for revision and agreement. The proposed metrics shall reflect operations and maintenance activities, service requests, sustaining engineering, and ID/IQ support.

Financial Reports – The contractor shall provide the following financial reports as an attachment to the NF 533, or as separate DRD submission as stated below:

a. NF 533 Financial Reports (DRD-MS-03). The contractor shall submit a detailed and accurate Monthly Financial Management Analysis Reports on NF 533M and Quarterly Financial Management Analysis Report on NF 533Q, by customer fund source, in accordance with instructions in NASA Policy and Directives (NPD) 9501.2D, *NASA Contractor Financial Management Reporting*. The NF 533 shall be submitted in an electronic format that is compatible with the Government's core financial system, SAP. The contractor's planning, tracking, and reporting shall include integration of cost to three specific activities (Operations/Maintenance, Service Requests, and Sustaining Engineering). In addition to the NF 533 report the following deliverables shall be submitted:

   i. Monthly Work Order Report. The contractor shall submit a monthly work order report, by customer fund source, documenting direct hours worked based on a mutually agreed upon charging rule set. In addition, a separate monthly report shall be submitted documenting the work orders completed during the period including the total number of hours expended, sorted by customer fund source and WBS element.

   ii. Contract Operating Plan/Report. The contractor shall develop and manage an Annual Phased Contract Operating Plan (DRD-MS-04) by Government fiscal year (GFY) on the basis of customer/fund source, WBS level 2, and WYEs with monthly execution and variance analysis to ensure total contract costs have been reconciled. This plan shall include a summary of major assumptions and planning milestones (i.e., launches and other special activities) which supports the Monthly Financial Analysis as stated in 1.2.a.iii. The contractor's actual cost shall not exceed the Operating Plan in any given fiscal year.

   iii. Monthly Financial Analysis. The contractor shall electronically submit and present a detailed monthly financial analysis by customer and fund source based on the approved operating plan for each customer by cost and WYE. The analysis shall provide variance explanation in the areas of actual cost versus Operating Plan and Contract Value, estimate at completion of current FY, overtime, and WYE.

   iv. Direct and Indirect Rates Report (DRD-MS-05) and Review. The contractor shall provide a direct and indirect rates report and review quarterly. Discussions shall focus on the variance in proposed versus actuals.

   v. Negotiated Estimated Cost (NEC) Report (DRD-MS-06). The contractor shall provide a reconciliation of the FY NEC to Operating Plan and actuals. The contractor shall also provide variance explanation of the actual cost to the FY NEC on a quarterly basis.

   vi. Annual IT Headquarters Report and Special IT Budget (DRD-MS-07) inputs. The contractor shall electronically submit a detailed annual report categorizing cost by the following elements: Voice Services, Wide Area Network (WAN) Services, Local Area Network (LAN) Services, Video Infrastructure, Desktop Services, Data Center,

Applications Services, Messaging and Collaboration, IT Security, IT Management, and other IT services. Input to support development of the PPBE IT submit, as well as input for Exhibit 53, Exhibit 300 forms, and KSC Capital Planning and Investment Control process, shall also be required in accordance with the guidelines provided by the IT Business Office.

vii. Government Owned Contractor Held Capital Assets Report (DRD-MS-08). The contractor shall electronically submit the report to the NASA Property Accountant.

viii. Contractor Owned Contractor Held Capital Assets Report (DRD-MS-09). The contractor shall electronically submit the monthly report capturing the description, acquisition cost, depreciation approach, and current net book value.

b. Any credit due to the Government associated with H.18, Work for Others, that is accomplished by the contractor shall be reported on the NF 533. All other costs associated with work for others shall not be included in the NF 533. Work for Others agreements and costs shall be between the contractor and commercial organization for which work is being performed.

DRDs Referenced in this Section:

Five-Year Technical and Cost Plan, DRD-MS-02
NF 533 Financial Report, DRD-MS-03
Annual Phased Contract Operating Plan, DRD-MS-04
Direct and Indirect Rates Report, DRD-MS-05
Negotiated Estimated Cost (NEC) Report, DRD-MS-06
Annual IT Headquarters Report and Special IT Budget, DRD-MS-07
Government Owned Contractor Held Capital Assets Report, DRD-MS-08
Contractor Owned Contractor Held Capital Assets Report, DRD-MS-09

1.3 Contract Management

The contractor is responsible for overall management of the contract requirements and effective, customer-focused contract management that results in consistently high-quality services, products, and deliverables.

In performance of this contract, the contractor shall:

a. Implement effective and efficient strategies to establish and sustain amicable relations with labor unions while using prudent business practices to ensure best value to the Government.

b. Ensure all contractor personnel data are maintained in NASA Self Service Management Tool (SSMT).

c. Report to the CO all conflicting technical information received during the contract performance so that the Government may provide solutions or appropriate direction. Such conflicts shall be reported on KSC Form No. 8-268, *Request for Information/Clarification (RFIC)*, to be provided by the Government. A copy of each RFIC will be provided to the COTR concurrently with the transmittal to the CO. The contractor shall log and control each RFIC, including those generated by subcontractors.

d. Provide a Quarterly Headcount Report (DRD-MS-10).

e. Provide an Advance Notification of Workforce Reduction Report (DRD MS-11).

f. Provide a Quarterly 3rd Step Labor Grievances and Arbitrations Report (DRD MS-12).

DRDs Referenced in this Section:

Quarterly Headcount Report, DRD-MS-10
Advance Notification of Workforce Reduction Report, DRD-MS-11
Quarterly 3rd Step Labor Grievances and Arbitrations Report, DRD-MS-12

1.3.1 Records and Data Management

The contractor is responsible for managing and maintaining all Government owned, contractor held records, including legacy Federal records (data created for Government use and delivered to, or falling under the legal control of, the Government) inherited from the predecessor contractors. These responsibilities include providing Government representatives access to all contractor-held Government records, and leaving all Government owned data at KSC at the completion or termination of this contract.

In performance of this contract, the contractor shall:

a. Develop, maintain, and implement a Records Management Plan (DRD-MS-13) including an annual “Summary of Record Holdings and Transfers”.

b. Manage legacy Federal records (data created for Government use and delivered to, or falling under the legal control of, the Government) inherited from previous contracts.

c. Leave all Government owned data at the NASA Center or its Component Facility at the completion or termination of this contract and deliver Government owned data to the Center Records Manager.

d. Provide NASA or authorized representative access to all Government records. The Government reserves the right to inspect, audit, and copy record holdings.

DRDs Referenced in this Section:
Records Management Plan, DRD-MS-13

1.3.2 Emergency Management

In performance of this contract, the contractor shall:

a. Develop, update, and implement an Emergency Preparedness Plan (DRD-MS-14) in compliance with Joint Handbook (JHB) 2000, *Consolidated Comprehensive Emergency Management Plan*, and Joint Documented Procedure (JDP)-KSC-P-3014, *Generic Emergency Procedures Document*. The plan shall include the contractor's assigned systems, hardware, software, infrastructure, equipment, data storage, and operations.

b. Ensure that the Emergency Preparedness Plan includes plans to respond to significant loss of capability due to accident or incident, equipment or infrastructure failures, attacks against computer systems and networks, loss of capability due to natural disaster, and other Center-level emergency situations, and include plans to conduct timely recovery. The plan shall include the contractor's approach to implementing specific protective and preventative measures for the contractor's assigned facilities, systems, equipment, and operations. Mission specific requirements shall be addressed where applicable.

c. Support hurricane preparation and recovery activities.

d. Plan for and participate in drills and implement the Emergency Preparedness Plan for declared emergencies.

e. Respond and implement real-time identified requirements at the direction of the CO, COTR, or designee under Center-declared or program-declared emergency conditions.

f. Modify and maintain D9001, *Comm. Systems Hurricane Preparedness Procedures*, for all services provided in performance of this contract. Initial modification shall be completed by January 1, 2009.

g. Designate a contractor Emergency Coordinator responsible for supporting emergency preparedness planning and implementation, and interface with the KSC Emergency Preparedness Officer.

h. Take immediate action to eliminate hazards to personnel, equipment or environment; prevent loss of or damage to Government property; and restore essential services following a declared emergency condition.

DRDs Referenced in this Section:

Emergency Preparedness Plan, DRD-MS-14

1.4 Technical Performance Management

The contractor is responsible for providing technical services which include system operations, maintenance, sustaining engineering, systems engineering, customer requirements tracking, Test Team interface, and analysis and assessment per elements in PWS Section 3. The technical services provided under this contract support program and institutional customers. The contractor is responsible for informing the Government and the customer of work progress and any issues affecting service delivery.

In performance of these services, the contractor shall:

a. Recommend, develop, and implement innovative approaches, consistent with Government guidance, that improve services and customer satisfaction provided under this contract.

b. Operate, maintain, configure, de-configure, integrate, de-integrate, modify, refurbish, decommission, and dispose of obsolete system hardware and software listed in Appendix 11, *Government-Furnished Property*, in accordance with KSC procedures.

c. Provide technical system services up to end-equipment interfaces, Customer Owned and Maintained (COAM) interfaces, and other service provider demarcation points.

d. Notify the COTR or designee of all service disruptions and system down-times on a real-time basis. Notification shall include impact to service users.

e. Report system readiness of all equipment necessary to satisfy mission and institutional requirements at review meetings held by program customers.

f. Utilize TechDoc, to the fullest extent possible, as the data repository for documentation such as DRDs, reports, white papers, and other contractor created items.

g. Provide all necessary information to ensure system readiness for all major processing and launch activities.

h. Establish Associate Contractor Agreements (ACAs) with other designated NASA and DoD/USAF contractors. In no case should ACAs be in conflict with requirements established by the Government.

i. Respond to Government requests for Information Management data items.

1.4.1 Operations/Problem Resolution

The contractor is responsible for ensuring that services are available to accomplish requirements, avoiding impacts to administrative and processing activities, and providing end-to-end configuration, validation, verification, and operations to accomplish contract requirements.

In performance of these services, the contractor shall:

a. Receive trouble calls from customers and the Institutional Services Contract (ISC) Work Control Center, 24 hours a day, 7 days per week.

b. Respond to trouble calls in accordance with nominal support requirements as defined in individual functional areas of PWS Section 3, Technical Services.

c. Provide Daily System Status Report (DRD-MS-15) via e-mail prior to 7:30 a.m. local time each day.

DRDs Referenced in this Section:
Daily System Status Report, DRD-MS-15

1.4.2 Customer Requirements/Service Requests

Program and institutional customers may obtain services under this contract directly from the contractor via requirements documents, scheduling messages from other NASA centers, integrated program schedules, other contractor work control systems, and customer work requests submitted by authorized agents. These requirements may request use of already existing services, while others will require specific work to be performed. In cases that require the contractor to create or modify service, the contractor shall create a Maximo work order and update with status.

In performance of these services, the contractor shall:

a. Respond to requests submitted by authorized agents through Maximo and any customer service interface to Maximo.

b. Respond to Kennedy Program Requirements Document (KPRD) and Program Requirements Document (PRD) items using the Automated Support Requirements System (ASRS) in accordance with KSC GP60-3, *Automated Support Requirements System Handbook*, or its successor.

c. Fulfill work requirements initiated in KSC contractor's work control system and transmitted or transferred to IMCS work control system.

d. Respond to NASA Integrated Service Network (NISN) Service Requests (NSRs) from other Centers.

e. Respond to scheduling messages from other Centers.

f. Set due dates in response to customer need dates in adherence with the timeframes established in Appendix 5, *Performance Metrics*.

g. Coordinate multiple internal organizations to provide a single interface to the customer.

h. Communicate work order progress to the customer.

i. Survey the customer to determine customer satisfaction.

1.4.3 Work Documentation Authorization (In and Out-of-Family)

Work requested by the customer and IMCS internally generated falls into two categories: In-Family and Out-of-Family. In-Family work is routine and repetitive in nature. It is normally associated with a provisioning of a standard service. Government technical approval is not required prior to the contractor performing work classified as in-family. Work classified as Out-of-Family denotes items that the Government technical authority must approve prior to contractor implementation. Typically this work involves system architecture changes, items that can have a significant impact on system performance, and other high visibility tasks as deemed by the Government. Government disposition time to approve Out-of-Family will not count against service delivery metrics. Appendix 13, In-Family and Out-of-Family Listing provides additional detail. The contractor shall ensure work is correctly classified as In-Family or Out-of-Family prior to start. Ensure Out-of-Family work is not started prior to receiving Government technical approval.

1.4.4 Configuration Management

The contractor is responsible for developing, implementing, and updating a Configuration Management Plan (DRD-MS-16) for all technical services, systems, hardware, software, components, documentation, forms, and processes operated under this contract.

In performance of these services, the contractor shall:

a. Establish, implement, and comply with a process for configuration management for all aspects of the contract.

b. Provide, revise, track, and maintain drawings, configurations, specifications, and any other documentation for systems under this contract. All changes made in the field shall be reflected in documentation and drawings within 20 working days of implementation. This information shall be on-line and accessible to designated Government personnel.

c. Update and maintain Appendix 12, *System and Service Location Matrix*.

d. For Out-of-Family items, manage and operate Configuration Control Board(s) (CCB) for the formal additions and changes to IMCS systems.

e. Participate in KSC-wide configuration management processes by using KSC-wide tools such as Configuration Management Data System (CMDS) and its successor.

f. Adhere to local mission freeze policies. These policies disallow changes to systems during certain mission events. Process freeze exemption requests on behalf of the customer as warranted.

g. Track change requests for systems and application modifications using a contractor provided or Government-furnished change request system.

DRDs Referenced in this Section:
Configuration Management Plan, DRD-MS-16

1.4.5 Work Control

The contractor is responsible for establishing, implementing, and updating a documented work control process that is used to plan, schedule, execute, monitor, and document work.

In performance of these services, the contractor shall:

a. Utilize Government-furnished Maximo as the IMCS work control system.

b. Receive work requests from multiple KSC central help/work control desks.

c. Ensure all internal and external work items are completed in accordance with Appendix 5, Expectation, Performance Standards, and Metrics.

d. Ensure Government approval is obtained for all work deemed Out-of-Family as indicated in Appendix 13, *In-Family and Out-of-Family Listing*.

e. Maintain the authoritative record of work performed.

f. Provide status information to the customer about work order progress.

g. Provide work order status information to other contractor work control processes.

h. Assist in the migration of Maximo data to the successor contractor.

1.4.6 Maintenance

The contractor is responsible for implementing a maintenance program for all contractor managed system hardware, software, and support equipment, at a level that ensures the reliability, cost effectiveness, serviceability, and longevity of the assigned systems. Maintenance includes end item corrosion control and mitigation. The contractor is responsible for developing and maintaining a Maintenance and Sustaining Engineering Plan (DRD-MS-17).

In performance of these services, the contractor shall:

a. Purchase “state-of-the-shelf” equipment when replacing equipment under maintenance activities.

b. Maintain the historical systems maintenance and repair data utilizing the Government-furnished Maximo work control system.

c. Analyze system maintenance records and provide trending information for repair and maintenance activities.

d. Provide a Technical Status Report (DRD-MS-18) to the Government for each area in PWS Section 3, Technical Services, to include detailed failures reports, corrective actions taken, system documentation status, operational document status, maintenance performed during current month, maintenance scheduled for subsequent month, general system performance, general system condition, and any other issues or concerns.

e. Obtain CO approval prior to actions that void a warranty, guarantee, or maintenance contract of an IMCS system.

f. Establish and maintain all maintenance agreements and licenses with the exception of those covered under Agency Fee-For-Service arrangements. Software support renewals are required for all Maximo users for all the Institutional contracts.

g. Create and maintain a database capturing all maintenance agreements and licenses and their period of coverage including, but not limited to, manufacturer, model, serial number, and location (building and room number).

DRDs Referenced in this Section:

Maintenance and Sustaining Engineering Plan, DRD-MS-17
Technical Status Report, DRD-MS-18

1.4.7 Sustaining Engineering

The contractor is responsible for providing sustaining engineering services for all systems, software, and equipment identified in this contract. These activities are normally not associated with work requests from customers. Sustaining engineering includes changes and modifications to systems to provide additional service capacity, add features to software, reductions of operational risk, replacement of obsolete hardware and software, or consolidation of services.

In performance of these services, the contractor shall:

a. Conduct data and system administration, analysis, testing/troubleshooting, tuning, and systems programming activities.

b. Perform preventive maintenance and repairs for hardware systems and stand-alone equipment.

c. Make changes to systems and software to increase efficiency, lower costs, and decrease operational risk.

d. Manage and document the configuration of the current architecture and planned architecture changes utilizing procedures and processes developed in the Maintenance and Sustaining Engineering Plan (DRD-MS-17).

e. Recommend, procure, incorporate, and operate replacements for obsolete Government-furnished property (GFP). As part of the Five Year Technical and Cost Plan (DRD-MS-02), the contractor shall develop recommendations for replacing components and systems to decrease obsolescence. The Government will approve planned replacements or upgrades before any contractor expenditures.

f. Ensure that no sustaining engineering change causes an overall system architecture modification or a degradation of service.

1.4.8 Systems Engineering and Integration

The contractor is responsible for providing end-to-end systems engineering and service integration for all of the services required in performance of this contract.

In performance of these services, the contractor shall:

a. Establish and manage systems engineering processes to ensure end-to-end integration and improve service delivery.

b. Perform Systems Engineering in support of development activities including requirements definition, design, integration, test, and transition to operations.

c. Perform design analysis, requirement analysis, investigate alternative solutions, architecture trade-off, make/buy assessments, system capacity analysis, operations concept development, and document results.

d. Perform Project Management and System Engineering and Integration (SE&I) for current and future IMCS systems hardware and software. Develop systems engineering planning documents.

e. Evaluate, test, and document commercial off-the-shelf (COTS) software and hardware products including development and engineering tools.

f. Coordinate activities at the system interface boundaries with other contractors and Government organizations.

g. Support design reviews for existing and new facilities on KSC and other NASA occupied areas.

h. Conduct design reviews for IMCS systems hardware and software.

i. Follow NPR 7120.5D, *NASA Program and Project Management Processes and Requirements* and NPR 7123.1A, *NASA Systems Engineering Processes and Requirements* when applicable.

j. Perform all grounding and bonding designs under the supervision of a registered Professional Engineer. Ensure final reports and design drawings contain the signature of the registered Professional Engineer that approved the final implementation.

1.4.9 Risk Management

The contractor shall establish, update, and implement a Risk Management Plan (DRD-MS-19) in accordance with NASA Procedural Requirements (NPR) 8000.4, *Risk Management Procedural Requirements*. The Risk Management Plan shall provide an organized, systematic decision making process, including the criteria, methods, and procedures for effectively managing risks related to this contract.

DRDs Referenced in this Section:
Risk Management Plan, DRD-MS-19

1.4.10 Test Team Interface

The contractor is responsible for providing a test team interface in support of communications systems and services used for NASA and USAF mission activities. The contractor serves as the focal point for communications scheduling, access to communications facilities and assets, outage coordination, customer trouble ticket processing, reporting, and coordination with test team and other communications interfaces.

The nominal support requirement for this service is 24 hours a day, 7 days a week.

In performance of these services, the contractor shall:

a. Provide a single interface point for real-time operations support.

b. Monitor Operational Intercommunications System (OIS) and respond to Operation and Maintenance Instruction (OMI) callouts for communications systems.

c. Coordinate activities of communications work groups supporting mission operations.

d. Maintain and publish (on the web) a daily communications support schedule.

e. Create trouble tickets to document system problems as they are reported.

f. Coordinate emergency call-in for system restoral outside nominal staffing hours defined in individual functional areas of PWS Section 3, *Technical Services*.

g. Create temporary test configuration documentation to capture real-time requirements.

1.4.11 System Outage Management

The contractor is responsible for establishing and implementing a documented outage management process that is used to plan, schedule, execute, monitor, and document outage activities.

In performance of these services, the contractor shall:

a. Communicate planned outages in a manner that will allow customers to understand the impact to their area. Ensure outages have been properly coordinated and approved by KSC customers prior to implementation. Multiple notices shall be sent as outage period approaches.

b. Perform outages and execute maintenance actions during non-mission critical and off-shift timeframes in order to minimize risk to program operations and to limit impacts to Center-wide processes.

c. Participate in all KSC outage processes.

d. Create and maintain a database of assigned systems, their input requirements, and their impacts of service disruptions for use in the outage process.

e. Maintain and publish (on the web) a daily outage schedule for assigned systems.

f. Update impacts in other contractors' outage notification systems.

g. Recover from unplanned outages in a manner that limits impacts to Center or mission processing operations.

1.4.12 Formal Reviews/Meetings

The contractor shall provide technical and managerial support and input to institutional and program boards, panels, reviews, pre-test briefings, team, working groups, and various ad-hoc meetings. Some meetings require the contractor to give formal briefings, while others only require attendance and participation. The contractor shall support these meetings and reviews with the appropriate level of technical and managerial participation.

Some examples are listed below:

- Program Milestone Reviews (e.g., Flight Hardware Move/Mate Readiness Review, Pad Readiness Review, Flight Readiness Review (FRR), Launch Readiness Review (LRR), Payload Readiness Review (PRR), Facility Readiness Review, Ground Operations Readiness Review (GORR))

- Program Pre-test Briefings and Post-test Reviews (e.g., S0007, S0017, S0024, Special Test Briefings)

- Program Documentation Reviews (e.g., S0007 Barchart review, Program Requirements Documentation Review and Scrubs, Integrated OMI reviews)

- Working Groups (e.g., Launch Countdown Working Group (LCWG), Launch Commit Criteria Working Group (LCCWG), Ground Operations Working Group (GOWG), Chief Information Officer Working Group (CIOWG), Computer Security Official Working Group (CSOWG), Center Export Control Working Group (ECWG), NASA Electronic Forms (NEF) Working Group, various Integrated Product Team (IPT) Working Groups)

- Boards (e.g., Change Control Boards (CCB), Network Configuration Board (NCB), Engineering Review Boards, Risk Review Boards)

- Design Reviews

- Outage Reviews

- Anomaly/Investigation Reviews

- Quarterly IMCS Management and Contract Review

- Monthly ID/IQ Task Order Reviews

- Monthly IMCS Technical Operations Review

- Monthly IMCS Financial Review

- IMCS CO/COTR Meeting

- Major Move Reviews and Meetings

- Technical Systems Reviews

- Weekly Systems Status Meetings

1.4.13 Facilities Management

There are numerous facilities in which the contractor performs services under this contract and certain occupied and unoccupied facilities where the contractor is responsible for Facilities Management including: M6-342 (Central Instrumentation Facility (CIF)), M6-791 (Comm & Maintenance Shop), M6-138 (Central Distribution and Switching Center (CD&SC)), K6-1193 (Vehicle Assembly Building Repeater (VABR)), M6-0589 (Cable Engineering), M7-0531 (Banana River Repeater), N6-1118 (South Repeater (SR)), M6-0039 (Gateway), K6-900A (Battery Room), M7-0809 (Comm Cross Connect #1), J6-2428 (Comm Cross Connect #3),

K6-1745 (Comm Cross Connect #4), M6-0790 (Comm Cross Connect #5), Wilson's Corner CXT, K7-1205A (Press Site Comm Control Building), K7-1205B (Press Site Tip Shack), J8-1567 (Beach Tip Shack), K6-0548 (Comm Equipment Building), J7-0588 (Voice Comm Equipment Building), M6-0639 (Film Storage Building), M6-0489 (NASA Technical Records Center), K6-0548 (OIS Bldg), F6-2375 (UCS #10), H6-1629 (UCS #5), H7-0163 (UCS #9), J7-2162 (UCS #17), J8-0754 (UCS #7), J8-2228 (UCS #12), K8-1403 (UCS #15), K8-1648 (UCS #3), M7-0286 (UCS #2), CCAFS Building 1605, and the contractor occupied portion of Hangar G.

In performance of facilities management, the contractor shall:

a. Provide facility information to facility occupants.

b. Support the facilities excellence, energy conservation, fire, safety, and environmental programs.

c. Coordinate requests for utility outages with facility functional users.

d. Coordinate facility key control.

e. Conduct periodic facility walk-through inspections.

f. Support Directorate Facilities Utilization Managers (DFUM) with space utilization issues.

g. Coordinate work requests for maintenance, repair, or modification of the facility common areas.

h. Assist in surveillance of facility support services.

i. Develop and maintain a facility emergency evacuation plan.

j. Keep communication rooms free of trash, debris (including wire clippings), storage material, food, and drinks.

1.4.14 Customer Support Services

The contractor is responsible for providing Customer Support Services based on industry best practices (e.g., those established by the Service and Support Professional Association (SSPA), Help Desk Institute (HDI), or equivalent) that provide accurate tracking, routing, and reporting of the customer's requirements to ensure a timely resolution and to determine the most effective mechanism for future responses to similar requests. The contractor also provides users access to information about, assistance with, or distribution of contractor products and services. These services are intended to cover all aspects of this contract. In some instances, other contracts may include a centralized help desk function directly related to their specific contract deliverables. The contractor ensures that procedures and practices are in place to coordinate efforts with other

service providers to ensure a seamless approach to provide an accurate, timely, and professional response to a customer's request.

The nominal support requirement for this service is 1st and 2nd shift, Monday through Friday. Additional support may be required during major events based on scheduled customer requirements and may result in weekend and/or 3rd shift work.

In performance of these services, the contractor shall:

a. Ensure all calls are answered and, to the greatest extent possible, that the caller does not have to leave a message. Calls received after these hours shall be returned within two hours of the beginning of the next working day. Voicemail from customers received during the working day shall be returned within two working hours of the original call.

b. Provide the capability for customer to contact Customer Support Services via email. The contractor shall sort, log, and respond to emails received within one working day.

c. Work cooperatively with other help desks to resolve all problems regardless of the initial determination of the origin of the problem. Receive trouble tickets from and pass trouble tickets to other help desks.

d. Analyze problems corrected and implement an ongoing knowledge capture process that will enable Customer Support Services to increase the number of problems corrected during the customer's initial call.

e. Document problems reported and solutions provided utilizing the Government provided Maximo work control system.

f. Maintain knowledge of outages effecting services and communicate to customers.

1.4.15 Expectations, Performance Standards, Metrics, and Workload Indicators

The contractor shall be responsive to customer needs and provide high quality, measurable service. Appendix 5, *Expectations, Performance Standards, and Metrics*, indicates the level of service that is expected by the Government. Appendix 6, Workload Indicators, denote the estimated workload volume for external customers. The contractor shall develop, maintain, analyze, and report performance including actual workload levels in accordance with Contract Performance Metrics Report (DRD-MS-20). For Service Delivery metric calculation purposes, the contractor shall only include the customer generated work request and shall not include any contractor generated internal child work requests.

DRDs Referenced in this Section:

Contract Performance Metrics Report, DRD-MS-20

1.5 IT Security Compliance

IT security planning, implementation, and compliance is integral to all work performed at KSC and, therefore, is the responsibility of the entire contractor workforce. The contractor is responsible for providing technical support for IT security to the system owner, CO, COTR, Organization Computer Security Official (OCSO), Center CIO, Information Assurance Officer (IAO), and Center IT Security Manager (ITSM).

The contractor shall develop, document, maintain, and manage operational and technical IT security policies, procedures, and controls for all services the contractor provides to the Government. For each of these services, the contractor shall integrate the IT security policies, procedures, and control measures into their full life cycle, and shall test and annually review these policies, procedures, and controls for adequacy and compliance.

The contractor is not responsible for providing administrative or engineering desktops, workstations, or laptops for their use in the performance of this contract, as they are Government provided via the Outsourcing Desktop Initiative for NASA (ODIN) contractor or successor. For Government-furnished IT services, the Government is responsible for all necessary actions to achieve IT security compliance. For all contractor provided IT systems and GFP that the contractor is responsible for operating and maintaining, the contractor shall be responsible for ensuring IT security compliance.

For each system and service provided by the contractor in performance of this contract, the contractor shall comply, establish, maintain, and implement IT Security Plan (DRD-MS-21) in accordance with NPR 2810.1A, as supplemented by Appendix 10, *IT Security Implementation Guide*.

DRDs Referenced in this Section:

IT Security Plan, DRD-MS-21

1.6 Security Management

1.6.1 Physical Security

The contractor shall operate a security program in accordance with KSC, Agency, DoD, and Department of Homeland Security directives.

The contractor shall comply with requirements regarding sensitive but unclassified (SBU) information in NPR 1600.1.

1.6.2 Export Control

The contractor shall develop, update, and implement an Export Control Plan (DRD-MS-22) consistent with applicable KSC, Agency, Department of State, and Department of Commerce regulations and procedures. The contractor shall identify a representative to be named to the Center Export Control Working Group (ECWG).

DRDs Referenced in this Section:

Export Control Plan, DRD-MS-22

1.6.3 Audit/Investigation Support

The contractor shall provide support and information to internal and external auditing and investigations performed by agencies such as General Accounting Office (GAO), Office of the Inspector General (OIG), Defense Contracting Audit Agency (DCAA), Defense Contract Management Agency (DCMA), Federal Bureau of Investigation (FBI), Office of Management and Budget (OMB), independent boards, and other requests.

1.6.4 Continuity of Operations

The contractor shall develop and maintain a Continuity of Operations Plan (COOP) (DRD-MS-23) compliant with NASA NPD 1040.4A and NPR 1040.1. At least annually, the contractor shall test the COOP as defined in NPR 1040.1 and provide documented results to the Government per COOP Annual Test Report (DRD-MS-24).

DRDs Referenced in this Section:

Continuity of Operations Plan (COOP), DRD-MS-23
COOP Annual Test Report, DRD-MS-24

1.7 Mission Assurance

The contractor is responsible for establishing and maintaining a mission assurance program, including system safety, reliability, maintainability, and quality assurance, that meets KSC and NASA program requirements and is effective in the identification and mitigation of risks for all assigned systems and equipment.

The Government shall have immediate access to the sites or areas where work under this contract is being performed to determine the adequacy of the mission assurance programs.

In performance of these services, the contractor shall:

a. Perform safety, reliability, and maintainability analyses on all assigned critical and mission essential (ME) systems and equipment located at KSC and CCAFS as defined in National Space Transportation System (NSTS) 22206, *Space Shuttle Requirements for Preparation and Approval of Failure Modes and Effects Analysis (FMEA) and Critical Items List (CIL),* and successor documents.

b. Identify potential constraints and risks related to hazards and critical items in sufficient time to allow corrective action or implementation of acceptable mitigation without program impact. Present identified constraints and risks to the appropriate NASA Center Operations and Safety and Mission Assurance (S&MA) organizations prior to presentation to Program Risk Review Board and Engineering Review Board. Coordinate and communicate risk to affected Government organizations and other KSC contractors.

c. Ensure all contractor equipment, including equipment owned, assigned, leased, rented, or obtained from off-site locations, meets the applicable system safety and reliability analysis requirements of the KSC or NASA programs.

d. Develop and maintain a system safety, reliability, and maintainability analysis schedule of all assigned critical and ME systems and equipment. Include the type of analysis to be performed, systems and design engineering interfaces, and a completion date. Inform NASA S&MA of changes and updates to the schedule.

1.7.1 System Safety

The contractor is responsible for establishing a process for the identification, elimination, and control of hazards and integrated hazards throughout the complete life cycle of systems, equipment, materials, operations, and processes before introducing them into the work environment. All hazards shall be traceable from the initial identification through its resolution and any updates, using a continuous risk management approach.

In performance of these services, the contractor shall:

a. Develop a system safety approach to include both quantitative and qualitative analytical methods, as appropriate, to assess system and subsystem hazards of critical and ME systems and equipment and other hazardous systems.

b. Identify system criticality per NSTS 22206, *Space Shuttle Requirements for Preparation and Approval of Failure Modes and Effects Analysis (FMEA) and Critical Items List (CIL),* and successor documents. Develop hazard analysis for new and modified critical/ME and hazardous systems and equipment per NSTS 22254, *Methodology for Conduct of Space Shuttle Program Hazard Analyses*, and successor documents, and KNPR 8715.3, *KSC Safety Practices Procedural Requirements.*

c. Develop and process hazard analysis documentation in accordance with NSTS 07700, Volume V, *Information Management Requirements, Appendix C.4,* and successor documents.

d. Implement a process for NASA program approval of exceptions, deviations, or waivers from design or safety requirements or other requirements with safety or mission success impact per NSTS 22254, *Methodology for Conduct of Space Shuttle Program Hazard Analyses,* successor documents, and KNPR 8715.3, *KSC Safety Practices Procedural Requirements.*

1.7.2 Reliability and Maintainability (R&M)

The contractor is responsible for developing and maintaining a R&M program per KNPR 8720.1, *KSC Reliability, Maintainability, and Quality Assurance Procedural Requirements*. This responsibility includes establishment and implementation of a process which ensures R&M throughout the lifecycle for assigned systems and equipment, including R&M assessments for baseline allocations, trend analysis of materials and parts in support of operational integrity, and participation in design and failure reviews.

The contractor is responsible for supporting NASA programs in the development of system R&M analyses for assigned systems and equipment. This responsibility includes assessment of new design projects on assigned systems and equipment to assure that NASA program requirements are met per NSTS 5300.4 (1D-2), *Safety, Reliability, Maintainability and Quality Provisions for the Space Shuttle Program*, and successor documents.

In performance of these services, the contractor shall:

a. Develop and maintain FMEA and CIL on assigned systems and equipment per NSTS 22206, *Space Shuttle Requirements for Preparation and Approval of Failure Modes and Effects Analysis (FMEA) and Critical Items List (CIL),* and successor documents. Develop and maintain FMEA/CIL for new and modified critical and ME assigned systems and equipment.

b. Develop and process the CIL in accordance with NSTS 07700, Volume V, *Information Management Requirements, Appendix C.4*, and successor documents.

c. Integrate the reliability and system safety analyses into a single document referred to as System Assurance Analysis (SAA) for new and modified critical/ME assigned systems and equipment.

d. Develop and maintain Operational Maintenance Requirements and Specifications Document (OMRSDs) for assigned critical and ME systems and equipment systems per NSTS 08171, *Operations Maintenance Requirements Specification Document*, and successor documents, for new and modified critical/ME assigned systems and equipment. Equipment appearing on a CIL shall be given special attention in establishing hardware specifications and qualification requirements, and in the formulation of operating and maintenance procedures.

1.7.3 Quality Assurance

The contractor is responsible for supervising, directing, and controlling the quality of products and services provided to the Government, and assuring products and services procured meet the appropriate quality requirements. This responsibility includes development and maintenance of procedures that effectively control nonconforming supplies and services, including activities for the identification, segregation, disposition, and disposal of the supplies. Acceptance or rejection criteria shall be clear and measurable.

In performance of these services, the contractor shall:

a. Comply with KNPR 8730.2, *Quality Assurance Procedural Requirements*. Ensure existing, new and modified systems, and sub-systems include comprehensive quality surveillance. Perform Quality Assurance (QA) activities per NSTS 5300.4 (1D-2), *Safety, Reliability, Maintainability and Quality Provisions for the Space Shuttle Program*, and successor documents.

b. Ensure that the QA organization maintains independence from the performing organization. Ensure all QA personnel are qualified and, when required, certified to perform QA inspections prior to work being performed.

c. Develop, maintain, and implement a Quality Plan (DRD-MS-25). Develop and maintain quality control metrics to be included in this plan for approval by the Government. Comply with the requirements of ANSI/ISO/ASQ Q9001-2000, *Quality Management Systems (QMS) Requirements*.

d. Prepare and submit a Quality Program Evaluation (DRD-MS-26).

e. Identify Government source inspection for procurements and services based on the criticality (1, 1R, 1S, and 2 as referenced in NSTS 22206, *Space Shuttle Requirements for Preparation and Approval of Failure Modes and Effects Analysis (FMEA) and Critical Items List (CIL*) and successor documents) of the procurement for systems and equipment,

and other procurements identified by the Government based on system interface and vendor performance history.

f. Plan and conduct product assurance actions, including inspections, tests, and records review, which demonstrate contract, drawing, and specification requirements have been met on all articles and materials produced for NASA programs.

g. Utilize the Government-furnished work control system for problem and failure reporting of critical and mission essential equipment. Track all problem and failure histories and document corrective action.

DRDs Referenced in this Section:
Quality Plan, DRD-MS-25
Quality Program Evaluation, DRD-MS-26

1.7.4 Government/Industry Data Exchange Program (GIDEP)

The contractor is responsible for ensuring that information concerning significant problems involving parts, materials, and safety are exchanged to NASA and GIDEP and expeditiously released for action using the most effective means.

In performance of these services, the contractor shall:

a. Participate in the GIDEP in accordance with the requirements of NPR 8735.1B, *Procedures for Exchanging Parts, Materials, and Safety Problem Data Utilizing the Government-Industry Data Exchange Program and NASA Advisories*, and KNPR 8730.2, *Quality Assurance Procedural Requirements*.

b. Review all Failure Experience Data Reports (FEDR), to determine if any affect the contractor products produced for Government projects and programs. Take action to eliminate or mitigate any negative effect to an acceptable level as determined by the Government.

c. Generate the appropriate FEDR whenever failed or nonconforming items are discovered and make available to the Government. Coordinate all failure experiences and reporting of failures with the NASA-KSC GIDEP Coordinator.

1.8 Training

Investing resources for employee training and development is beneficial to the Government, contractor, and individual employee through enhanced performance, advanced capabilities, and increased resources to meet contractual requirements.

The contractor shall:

a. Provide a workforce that is trained, certified, and licensed, as required, competent, experienced, and reliable in order to meet all responsibilities under the contract.

b. Ensure that the work force is knowledgeable of the applicable laws, regulations, and Government directives (Occupational Safety and Health Agency (OSHA), Environmental Protection Agency (EPA), Export Control Regulations, Agency policy guidance, and KSC directives) affecting them and concerning their tasks.

c. Utilize existing Government-furnished training as stated in Section G.

d. Use the Government-provided Training & Certification Record System (TCRS) to document the KSC technical training and certification of contractor personnel.

e. Attend Government funded technical training for current and future IMCS systems.

f. Provide technical content (as the subject matter experts) to the KSC Institutional Support Services Contract.

g. Retain individual employee training records for at least five years after employment ends and provide to the Government upon request.

h. Offer, on a space available basis, all contractor-developed or provided training to Government personnel and customers.

i. Record all contractor-developed training in digital format, when appropriate.

j. Provide a Training and Certification Plan (DRD-MS-27).

DRDs Referenced in this Section:

Training and Certification Plan, DRD-MS-27

1.9 Logistics

The contractor is responsible for providing logistics functions which support the internal IMCS organizations as they provide services detailed in PWS Section 3, Technical Services, and for issuing radios and headsets to IMCS customers. Typical functions associated with logistics include property management, inventory management, receiving and inspection, material service center operation, and vehicle management.

1.9.1 Property/Inventory Management

In performance of these services, the contractor shall:

a. Assume the current inventory of all hardware and software as listed in Appendix 11, Government-Furnished Property (GFP), and provide property management.

b. Utilize the NASA Equipment Management System (NEMS) or its successor to track and manage property. Utilize Maximo as the asset management tool for items not required to be tracked via NEMS or its successor.

c. Identify and provide critical spares, bench stock, consumables and associated equipment, and materials required to meet the requirements of this contract.

d. Purchase supplies and services to accomplish assigned work on the IMCS contract.

e. Develop and implement an Equipment Loss Rate Plan (DRD-MS-28) to include equipment surveyed, items lost during the fiscal year, found on station, and any reinstated equipment.

f. Utilize Government excess channels for a "watch list" of equipment needed in support of the contract.

g. Survey manufactures of components which are important to the supportability of communication systems, and respond to "last production runs" by purchasing sufficient quantities to continue to support the affected system as appropriate.

DRDs Referenced in this Section:

Equipment Loss Rate Plan, DRD MS-28

1.9.2 Shipping/Receiving/Inspection Services

The contractor is responsible for utilizing Government-provided storage facilities for storage of all hardware, software, and other associated equipment to meet the requirements of this contract.

In performance of these services, the contractor shall:

a. Prepare items for shipping, with adequate documentation, as required by the Government-furnished services (GFS) shipping service provider.

b. Provide receiving and inspection functions including accountability, storage and warehousing support.

c. Utilize the existing property tags permanently affixed to all existing assets. Utilize Government provided NASA Equipment Control Number (ECN) tags and decals for acquired or procured equipment.

d. Identify excess and obsolete out-of-service assets, and initiate disposal per Agency and KSC guidelines, policies, and directives.

e. Ensure all items removed from service have all data removed prior to excess in accordance with applicable policies and procedures listed in Appendix 4, *Applicable Policies and Procedures*.

1.9.3 Material Service Center Services

The contractor is responsible for operating Material Service Centers in support of internal work processes for IMCS organizations. In addition, the contractor is responsible for issuing communication end items to IMCS customers.

In performance of these services, the contractor shall:

a. Store all hardware, software, and other associated equipment in accordance with manufacturer's storage specifications and recommendations that meet Agency and KSC guidelines, policies, and directives.

b. Ensure equipment is repaired and returned to stock to ensure no impact to operations.

c. Issue headsets, headset consumables, radios, remote speaker microphones, batteries, and chargers.

1.9.4 Vehicle Management

The contractor is responsible for performing vehicle management functions in accordance with NPR 6200.1, *NASA Transportation and General Traffic Management*; NPD 6000.1, *Transportation Management*; and KNPR 6000.1, *Transportation Support System Manual*, and Executive Order 13423, *Strengthening Federal, Environmental, Energy, and Transportation Management*.

In performance of these services, the contractor shall:

a. Furnish and maintain all general purpose vehicles in support of contract requirements. At the discretion of the contractor, GSA schedules may be utilized to satisfy the requirements for motor vehicles.

b. Operate NASA-owned or leased vehicles identified in Appendix 11, *Government-Furnished Property*.

c. Utilize KSC on-site fueling stations for fueling general purpose vehicles and Government-furnished vehicles.

d. Ensure that all drivers have proper state licenses, with the applicable endorsements, for requisite equipment being operated.

e. Input the required data into the Federal Automotive Statistical Tool (FAST) for any contractor-acquired or leased and NASA-owned vehicles annually, as scheduled by the NASA Fleet Manager.

f. Provide Motor Vehicle Utilization Plan (DRD-MS-29).

DRDs Referenced in this Section:

Motor Vehicle Utilization Plan, DRD MS-29

2.0 SAFETY AND HEALTH

The contractor is responsible for providing safe programs, technologies, operations, and systems to ensure the protection of the public, Astronauts and pilots, Government and contractor workforce, and high-value equipment and property.

In performance of these services, the contractor shall:

a. Take all reasonable safety and health measures in performing this contract to assure the protection of employees and property as described in NFS 1852.223-70, *Safety and Health.*

b. Maintain technical cognizance of proposed and implemented changes to all applicable Federal, state, and local laws, regulations, policies, and directives, as well as industry standards, and identify impacts to contractor safety and health requirements, processes, and practices.

c. Maintain safe and healthful operating locations and be proactive in the protection of personnel and property.

d. Provide the Government, or authorized contractor representative, immediate access to the sites or areas where work under this contract is being performed in order to conduct surveillance activities and determine the adequacy of the safety, health, and mission assurance programs. Provide all necessary records, including internal audit and assessment results and surveillance activities, to the Government for review.

e. Establish and maintain a comprehensive safety and health program that meets requirements as defined in NPR 8715.3B, *NASA General Safety Program Requirements*; KNPR 8715.3, *KSC Safety Practices Procedural Requirements*; and Air Force Range Command Range Safety Manual (AFSPCMAN) 91-710 V6, *Ground and Launch Personnel, Equipment, Systems, and Materials Operations Safety Requirements.*

f. Ensure the safety organization maintains independence from the performing organization. Support Government audit and surveillance activities of contractor safety and health programs.

2.1 Safety Compliance

The contractor is responsible for providing a safe and healthful work environment and shall perform all operations in a safe manner.

In performance of these services, the contractor shall:

a. Establish a safety and health program throughout all organizations of the contract including major subcontractors to comply with the Occupational Safety and Health Administration (OSHA) Voluntary Protection Program (VPP) Star Program requirements and submit VPP Application (DRD-SH-01).

b. Develop, maintain, and implement a Safety and Health Plan (DRD-SH-02), as required by NFS 1852.223-73, *Safety and Health Plan*. The plan shall address confined space entry compliance.

c. Prepare and submit Safety Program Evaluation (DRD-SH-03).

d. Ensure all contractor equipment, including equipment owned, assigned, leased, rented, or obtained from off-site locations is properly assembled, maintained, and safe for use.

e. Ensure each employee receives all required Federal or NASA initial and recurring safety and health training and maintain evidence that this required training has been completed and is current.

DRDs Referenced in this Section:

Voluntary Protection Program (VPP) Application, DRD-SH-01
Safety and Health Plan, DRD-SH-02
Safety Program Evaluation, DRD-SH-03

2.2 Occupational Safety

The contractor is responsible for ensuring a safe working environment by identifying, documenting, mitigating, and preventing workplace hazards, and ensuring the safe condition of assigned systems and equipment.

In performance of these services, the contractor shall:

a. Conduct safety and health inspections per OSHA VPP, NASA, and KSC safety and health requirements of all contractor-occupied work areas. At least one inspection per year shall be performed using qualified safety professionals. Document all findings, track to closure, and communicate to appropriate Government entities.

b. Ensure safety and health requirements, policies, methodology, and procedures are developed for the protection of personnel.

c. Document all mishaps, including injuries, property damages, close calls, and corrective actions into the NASA mishap-reporting database. Implement mishap reporting methods and timelines and ensure data accuracy per KNPR 8715.3, *KSC Safety Practices Procedural Requirements*, and submit Mishap Reports (DRD-SH-04). Type C and D mishaps and close calls shall be investigated and corrective action implemented within 30 calendar days.

d. Conduct mishap investigations per NPR 8621.1, *NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping*. In the event of a Government mishap investigation, support the investigation and make available all pertinent documentation and personnel, as requested.

e. Submit Safety Statistics Report (DRD-SH-05).

f. Submit a safety variance request for any waiver or deviation from a safety or health requirement to the Government for approval. All variance requests must be processed through the appropriate variance review and approval system in accordance with KNPR 8715.3, *KSC Safety Practices Procedural Requirements,* and AFSPCMAN 91-710 V6, *Ground and Launch Personnel, Equipment, Systems, and Materials Operations Safety Requirements.* Perform risk assessments for all variances requested to assure the safety of personnel and equipment is not compromised. Evaluate alternate work procedures as a result of a variance prior to implementation.

g. Ensure current Material Safety Data Sheets (MSDS) are readily available and reviewed by employees for materials used in the workplace.

h. Ensure employees are protected from serious workplace injury and/or illness resulting from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards per KNPR 8715.5, *KSC Personal Protective Equipment (PPE) Program*.

i. Develop and maintain written procedures for operations and equipment involving the use, exposure to, generation of, or control of occupational health hazards. Identify the hazards in written procedures and include instructions on use of required engineering controls and work practices, including required PPE.

j. Provide employees appropriate training and orientation to identify occupational health hazards in all work places and the protective measures required for safety. Notify employees of any changes or modifications to policies, procedures, or systems used to control exposure to health hazards.

k. Monitor and maintain accurate records of employees work hours, including forecasting work schedules, to ensure maximum work-time compliance per KNPR 8715.3, *KSC Safety Practices Procedural Requirements.*

DRDs Referenced in this Section:

Mishap Reports, DRD-SH-04
Safety Statistics Report, DRD-SH-05

2.3 Operations Safety

The contractor is responsible for providing employees with a workplace in which hazards are identified, evaluated, and eliminated or controlled. Activities associated with this contract shall comply with KNPR 8715.3, *KSC Safety Practices Procedural Requirements,* AFSPCMAN 91-710 V6, *Ground and Launch Personnel, Equipment, Systems, and Materials Operations Safety Requirements,* and Federal, NASA, state, and local regulatory safety and health requirements.

In performance of these services, the contractor shall:

a. Perform a safety assessment of all hazardous operations, high risk operations, and for first use of new and modified systems and equipment. Identify all hazards and appropriate mitigation. Submit new and revised assessments to NASA Institutional Safety for concurrence.

b. Develop and maintain technical operating procedures for operations, planned or unplanned, which are hazardous or constitute a potential operational constraint.

c. Ensure compliance with the KSC Lockout/Tagout Program for control of hazardous energy as described in KNPR 8715.4, *KSC Lockout/Tagout Program Procedural Requirements.*

d. Entry into and work in confined spaces shall be in accordance with the requirements of KNPR 1820.4, *KSC Respiratory Protection Program*, KNPR 1840.19, *KSC Industrial Hygiene Programs.*

e. Comply with the NASA Managed Safety Program for Pressure Vessels and Pressure Systems in accordance with NPD 8710.5, *NASA Safety Policy for Pressure Vessels and Pressurized Systems*.

f. Ensure compliance with NASA-STD-8719.9, *Standard for Lifting Devices and Equipment*.

2.4 Environmental Management

The contractor is responsible for ensuring that operations of assigned systems and equipment are in compliance with applicable Federal, state, and local environmental laws, regulations, Executive Orders, and NASA requirements per KNPR 8500.1, *KSC Environmental Requirements*. The NASA Environmental Program Branch is the single point of contact with all regulatory agencies concerning NASA issues such as: regulatory interpretation, compliance reporting, inspections, and spills or releases.

In performance of these services, the contractor shall:

a. Support NASA environmental program requirements applicable to the contractor, including response to environmental data calls; support to internal and external inspections and audits; providing support to required permit applications and environmental permits; and

providing technical support to contractor operations to meet environmental permit and regulatory requirements.

b. Ensure compliance with all environmental regulations, permits and licenses required by the Federal, State, or local governments or a subdivision thereof, or of any duly constituted public authority in performance of work.

c. Appoint in writing a primary and alternate Environmental representative for the contract. The contractor shall ensure all employees are aware of the Environmental representative and that individual's responsibilities. The person in this position must have adequate awareness training to accomplish the assigned duties including hazardous and controlled waste management requirements.

d. Identify, interpret, and apply new and existing environmental requirements with respect to contractor operations.

e. Prepare environmental reports for permitted activities and regulatory requirements if applicable.

f. Respond to Government data calls for chemical usage and storage records for each calendar year.

g. Perform waste minimization and pollution prevention opportunity assessments such as reducing Toxic Releases Inventory (TRI) chemical releases and hazardous waste.

h. Comply with NASA's affirmative procurement program for contractor procurements in accordance with KNPR 8500.1, *KSC Environmental Requirements* in and Executive Order EO13423, *Strengthening Federal Environmental, Energy, and Transportation Management.*

i. Support NASA's Environmental Management System (Reference KSC-PLN-1912, *KSC Environmental Management System (EMS) Plan*).

j. Promote environmental awareness within the contractor workforce.

3.0 TECHNICAL SERVICES

The contractor is responsible for providing the technical services described in this section. Nominal support hours required to perform these services are described where applicable. Government-furnished systems that provide these services are described in Appendix 8, *Current Systems Descriptions*. The locations where services are provided are indicated in Appendix 12, *System and Service Location Matrix*.

The services shall be functional, accessible, and usable 24 hours a day, 7 days a week.

3.1 Computer Services

The contractor is responsible for providing computer services including both Data Center Operations and Software Engineering. These include such services as the operation, maintenance, and sustaining engineering of computing systems, distributed servers, and peripherals, as well as the development and maintenance of computer and web applications.

The nominal support requirement for this service is 1st shift, Monday through Friday, and performing remote monitoring with on-call support at all other times. Additional support may be required during major events based on scheduled customer requirements and may result in 2nd shift, 3rd shift, weekend, or holiday work.

The contractor shall operate the Data Center and provide Software Engineering. Four levels of service shall be offered as follows:

Level 1: Infrastructure services only, including secure facility with physical access control, backup power, rack storage, environmental monitoring, network connectivity, and hardware monitoring services (e.g., reporting visible problems to customer). The customer is responsible for providing hardware (e.g., server, storage); operating system and related software components; back-end software (e.g., web, application, database, fileserver); and backup equipment and consumables. The customer is responsible for performing all system administration, operations and maintenance, sustaining activities associated with the hardware, software and associated applications, and developing, implementing, and maintaining the IT Security Plan.

Level 2: All services included in Level 1 plus hardware (e.g., server, storage) operations, maintenance, and upgrades; backup services; operating system operations and maintenance; system administration; and assists the customer with development of the IT Security Plan. Hardware and software shall be obtained in compliance with Clause H.21 and written justification provided to the COTR if a decision is made not to use Agency-wide contracts. The customer is responsible for providing back-end software (e.g., web, application, database, fileserver); application development and sustaining engineering; database administration; project management; and developing, implementing, and maintaining the IT Security Plan with the assistance of the Data Center personnel. Any customer requirements for back-end software that requires an operating system that is not currently supported or is not compatible with the existing software supported by the Data Center will be evaluated jointly by the Government and the contractor prior to implementation.

Level 3: All services included in Level 2 plus back-end software (e.g., web, application database, fileserver) and assist the customer with development of the IT Security Plan. The customer is responsible for providing the application development and sustaining engineering; database administration; project management; and developing, implementing, and maintaining the IT Security Plan with the assistance of the Data Center personnel. Any customer requirements for operating system and/or back-end software that are not currently

supported or are not compatible with the existing software supported by the Data Center will be evaluated jointly by the Government and the contractor prior to implementation.

Level 4: All services included in Level 3 plus application development and sustaining engineering; database administration; project management; and IT Security Plan development, implementation, and maintenance.

Services Provided by the Data Center	Level 1	Level 2	Level 3	Level 4
Physical Location	X	X	X	X
Physical Access Control	X	X	X	X
Redundant Power	X	X	X	X
Environmental Monitoring	X	X	X	X
Hardware Monitoring	X	X	X	X
Network Connectivity	X	X	X	X
Hardware and Operating System with, including Operations and Maintenance, Sustaining, Upgrades, and Backup Capability		X	X	X
System Administration *		X	X	X
Support Security Plan Development, Implementation, and Maintenance		X	X	
IT Security Plan Development, Implementation, and Maintenance				X
Hosting Services (e.g., Web, Application, Database, File Storage)			X	X
Data Backups			X	X
Hosting Services with Application Administration Option			X	X
Database Administration				X
Services Provided by Software Engineering				
Application Development & Sustaining				X
Project Management				X

* Customers will not have System Administration privileges for Levels 2, 3, or 4.

The contractor shall implement a continual process of site, server, storage, and software consolidation and rationalization utilizing technologies such as server and storage virtualization, dynamic workload management, and sub-processor partitioning through the use of metering/monitoring tools. The goal is to maximize IT infrastructure efficiency and reduce data center power consumption and heat loads and to provide a real-time enterprise infrastructure.

3.1.1 Data Center Operations

The contractor is responsible for the Data Center which consists of computer systems and services currently housed in multiple facilities. These systems support various services such as databases, file storage, and application hosting, as well as Internet and intranet services.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering of the Data Center and its associated systems.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Provide configuration control and design of systems including the creation and maintenance of installation and system interface drawings.

d. Implement and maintain access control procedures.

e. Operate, maintain, and perform system monitoring, initializations, upgrades, backups, recoveries, and storage management for production systems.

f. Determine and manage facility requirements including space allocation and assessments of power and heat loads.

g. Develop and implement acceptance testing to support installation of hardware systems, subsystems, components, peripherals, and interfaces.

h. Monitor system and subsystem efficiency and perform troubleshooting and tuning of systems, subsystems, components, peripherals, and interfaces.

i. Conduct day-to-day computer operations for multi-user hardware systems to support processing of varying on-line and batch applications and schedules.

j. Support consolidation of services which includes planning, testing, license management, capacity planning, and installation of computer systems hardware and software, as necessary.

k. Plan, engineer, integrate, and implement new capabilities and features to optimize and standardize workloads, meet customer requirements, and accommodate changes in technology.

l. Implement an automated Configuration Management Database (CMDB) to support discovery, catalog, and track IT infrastructure, enforce policy, best practices, and change management by January 15, 2009.

m. Monitor Data Center operations utilizing a federated database model with a consistent view that receives data from element-specific tools such as server configuration management, network management, and storage management.

n. Begin consolidation of IT services and migration to a single Kennedy Data Center by March 15, 2009.

o. Develop a Draft Plan to migrate all mainframe applications to a local web-based environment by March 15, 2009.

p. Perform system administration, folder setup, data transmission among systems, log monitoring and reporting, creation and deletion of network printer queues, system backups, virus scans, problem identification and resolution, performance monitoring and reporting, and list manager support.

q. Perform database administration including analyzing, planning, installing, testing, implementing, maintaining, tuning, and managing databases.

r. Perform web administration including server and site configuration, site creation, deployment, maintenance, searching, and indexing.

s. Perform application administration including monitoring, logging, and reporting applications performance and capacity utilization to identify potential problems and recommend systems enhancements. Prepare and verify job execution programs.

t. Perform streaming media administration including encoder configuration and operation, image capture encoder configuration and operation, and live and on-demand web broadcasting and video streaming support.

u. Perform storage area network administration including disk configuration, tape library configuration, tape inventory rotation, and tape restore operations.

v. Serve as Associate Account Authorization Official (aAAO) for the NASA Account Management System (NAMS) providing help desk support for local users .

w. Perform production control and job scheduling, to include monitoring and problem notification.

x. Coordinate and implement the installation of new capabilities, bug fixes, and testing in response to new hardware, operating system, and Commercial Off the Shelf (COTS) and Government Off the Shelf (GOTS) releases.

y. Coordinate, support, and interface with Agency and other Center systems and applications.

z. Maintain and support system and application configuration, move development content (developed within or outside of this contract) to production, and move development applications to production.

aa. Provide data acquisition, processing, analysis, and data reduction services.

bb. Perform audits of applications developed outside this contract to ensure policy compliance prior to transitioning to production.

A list of applications currently supported by the Data Center is included in Appendix 7, *Applications List*.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.1.1 Data Center Operations.

3.1.2 Software Engineering

The contractor is responsible for providing software engineering which encompasses the development, architecture, and engineering of software systems. It integrates the many aspects of programming, from requirement gathering, initial planning, writing and maintaining code, and meeting budgets, to producing quality software to satisfy the Government's needs.

Scientific, business, and web applications and websites are developed using the most appropriate current technology, consistent with customer requirements. These range in size and complexity from small single-user to large multi-center applications.

Applications are managed via formal and informal change approval processes depending on their criticality. Return to service requirements are assigned to each application and system.

In performance of these services the contractor shall:

a. Develop scientific, business, and web applications, websites, and systems supporting institutional and base operations.

b. Maintain and sustain applications and systems supporting institutional and base operations disciplines including as listed in the Appendix 7, *Applications List*.

c. Update and maintain the application, Contractor IT Systems Database, including the additional information listed in Appendix 7, *Applications List*.

d. Update and maintain a data flow document (down to the "primitive process" level) that shows all data interfaces for applications listed in Appendix 7, *Applications List*, by October 1, 2009.

e. Perform planning, testing, and installation of software.

f. Consolidate and centralize KSC's workload on fewer mainframe and midrange server platforms and operating environments.

g. Consolidate applications to avoid duplication and increase efficiency.

h. Provide configuration control of applications including the creation and maintenance of data flow and system interface drawings.

i. Provide and maintain compilers, libraries, and other software required to support application development.

j. Document and maintain the listing of software development tools used to sustain existing and create new applications. Tools used to develop new applications shall be approved by the Government-chaired CCB.

k. Provide database design, development, sustaining engineering, scripting, reporting, and dictionary maintenance.

l. Provide life cycle support consistent with the Software Engineering Institute (SEI) Level 2 Capability Maturity Model Integration (CMMI) assessment.

m. Maintain development and sustaining engineering schedules in Microsoft Project for all work associated with systems, applications, and websites developed or sustained under this contract.

n. Develop products to comply with Section 508 of the Rehabilitation Act of 1973, Children's Online Privacy Protection Act (COPPA), NASA, and KSC web development requirements.

o. Establish and provide electronic User and Reference Guides and Developer Documentation for all software applications developed under this contract.

p. Provide data preparation, data entry, generation, review, and distribution of reports.

q. Provide web curator services, web page development support, and real time web page updates.

r. Support website registration activities.

s. Acquire and maintain licenses associated with the applications used in the performance of Software Engineering requirements.

t. Enable two-factor security access on previously modified applications that are classified as IT Security Category of Moderate.

u. Provide 2-factor security access for all applications that are classified as IT Security Category of Low between October 2008 and September 2010.

v. Migrate to use NAMS for account provisioning all applications that are classified as IT Security Category of Low between October 2008 and September 2009.

w. Update and maintain IT resource information data in the Agency provided application tracking tool.

A list of applications currently supported by the Data Center is included in Appendix 7, *Applications List*.

The current systems that support these services are referenced in Appendix 8 - *Current Systems Descriptions* – B.3.1.2 Software Engineering.

3.2 Cable Plant Services

The contractor is responsible for providing cable plant services which include operation, maintenance, and sustaining engineering of the copper and fiber optic cable plant, including cable management and support for end-to-end configuration/validation tests to meet operational and institutional requirements at KSC and the NASA occupied facilities at the CCAFS.

The nominal support requirement for this service is 1st and 2nd shift, Monday through Friday, with call-in at other times. Additional support may be required during major events based on scheduled customer requirements and may result in 3rd shift, weekend, or holiday work.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for the cable plant.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Provide trenching and digging capabilities. Obtain necessary permits for trenching, boring, and digging activities.

d. Monitor all construction activities and excavations at KSC and attend pre-launch excavation reviews.

e. Coordinate and monitor fieldwork for the placement of new underground communications utilities.

f. Maintain specialized cable support equipment.

g. Perform services in accordance with applicable duct usage or fiber lease agreements.

h. Maintain cable to 7CFR 1755.890, *RUS Specification for Filled Telephone Cables with Expanded Insulation*, for the copper plant, and 7CFR 1755.900, *RUS Specification for Filled Fiber Optic Cables*, for the fiber plant.

i. Maintain the cable support infrastructure for both external and intra-facility cable routing capability and provide support for conveyances to KSC's external customers.

j. Maintain manholes (exclusive of structural maintenance), ducts, handholds, and cable pathways at KSC, NASA occupied facilities at the CCAFS, and the Titusville Sand Point Terminal.

k. Maintain cable pressurization and cathodic protection systems for air core cables.

l. Operate calibrated air quality testing equipment to ensure safe working conditions in confined spaces.

m. Provide technical support for design, installation, and maintenance of communications manholes.

n. Maintain the Fiber Optic Terminals (FOT) at KSC, CCAFS demarcation facilities, and the Titusville Sand Point Terminal.

o. Monitor activities performed by commercial communication service providers that may impact KSC communications infrastructure.

p. Test newly installed outside cable plant to the demarcation point of non-NASA facilities to 7CFR 1755.890 standards for the copper plant and 7CFR 1755.900 standards for the fiber plant.

q. Test existing outside cable plant to the demarcation point of non-NASA facilities to generally accepted standards for Plain Old Telephone Service (POTS) as specified in the 3M Dynatel Telecom Test Set.

r. Provide for each cable work order a minimum of one cable plant engineer that is certified as a Registered Communications Distribution Designer (RCDD) by Building Industry Consulting Service International (BICSI) or equivalent.

s. Provide for each cable work order a minimum of one cable plant technician that is certified as an Installer by BICSI or equivalent.

t. Install and maintain all cable in accordance with KSC-STD-E-0021, *Standard for Design of Telecommunications Premises Distribution Systems*.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.2 Cable Plant.

3.2.1 Copper Cable Plant Services

The contractor is responsible for providing copper plant services in support of operational and institutional requirements at KSC.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for the copper cable plant.
.

b. Provide technical and management expertise for the communications pathways including communications manhole and conduit systems, repeaters, Cross Connect Terminals (CXTs), Telephone Terminal Cabinets (TTCs), Main Distribution Frames (MDFs), and dedicated communications cable trays.

c. Provide technical and management expertise for facility premise wiring from the frame to the Customer Face Plate (CFP), frame cross connects, TTC cross connects, circuit protectors, circuit design, and installation.

d. Install all equipment including cabling required for interfacing with the new facility premises wiring.

e. Maintain and update the cable records database for all circuit changes.

f. Operate a Test Board for copper cable plant.

g. Maintain frame lights.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.2.1 Copper Cable Plant.

3.2.2 Fiber Optic Cable Plant Services

The contractor is responsible for providing fiber optic cable plant services at KSC utilizing both multi-mode and single-mode fibers with FOT for service connections. New facilities will be premise wired by the construction contractor.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for the fiber optic cable plant.

b. Provide a balanced interface for the optical transmission of video, analog, or digital data signals over a single fiber, asynchronous data, either balanced or unbalanced, and Wavelength Division Multiplexer (WDM) capability.

c. Install all equipment including cabling required for interfacing with the new facility premises wiring.

d. Ensure that the single-mode fiber plant adheres to the Corning SMF-28 specifications.

e. Ensure that the multi-mode/single-mode fiber plant adheres to 79K28125, *Fiber Optic Cable Specification for KSC*.

f. Perform installation and corrective maintenance of fiber ribbon, air blown fiber, and loose tube construction fiber cables.

g. Maintain and update the fiber plant records to reflect all installed fiber cables. Verify records with CCAFS and external customers to correct fiber record inconsistencies at affected demarcation points.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.2.2 Fiber Optic Cable Plant.

3.3 Transmission Services

The contractor is responsible for providing transmission services which consist of operations, maintenance, and sustaining engineering of analog and standards based data transmission systems to achieve the most efficient use of KSC resources.

The nominal support requirement for this service is 1st and 2nd shift, Monday through Friday, with call-in at all other times. Additional support may be required during major events based on scheduled customer requirements and may result in 3rd shift, weekend, or holiday work.

3.3.1 Data Transmission Service

The contractor is responsible for providing analog and standards based data transmission service.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for copper and fiber based analog transmission systems.

b. Operate, maintain, and perform sustaining engineering for standards based data transmission including DS1 and DS3 electrical circuit transmission, OC1-OC192, Ethernet transmission, ATM, T-Carrier/SONET backbone and management service, and sub rate distribution.

c. Operate, maintain, and perform sustaining engineering for uninterruptible power supplies (UPS) or battery back-up at all M-13, SONET multiplexer, and ATM locations.

d. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing systems.

e. Change out circuit cards in Agency-wide transmission system interface equipment and assist in the upgrades, additions, and deletions to these services.

f. Receive and stage spares (provided by others) for Agency-wide transmission systems and ship defective cards back to the originator.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.3.1 Data Transmission.

3.3.2 Kennedy Forward Return Link (KFRL)

The contractor is responsible for providing KFRL ground networks communications to support space flight operations, testing, and simulations.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for the KFRL system.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Interface with NISN mission networks uplinks and down links.

d. Provide interfaces to the Record and Playback System (RPS).

e. Perform blocking and de-blocking, as required by PRD.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.3.2 KFRL.

3.3.3 Department of Defense (DoD)/United States Air Force (USAF) Range Communications (CLIN 003)

The contractors is responsible for providing transmission services for timing, countdown, narrowband data, point-to-point (VDL), telephone, intercom, miscellaneous audio, teletype, wideband data, and video in accordance with KPRD/RD160. KPRD/RD-160 defines the support required for the Eastern Range (ER) sites on KSC during operations scheduled on the ER. The 1st Range Operations Squadron Scheduling (1 ROPS/DOUS) will request the support through the NASA Scheduling Office on behalf of the following ER launch programs and supporting agencies: Atlas V, Delta II, Delta IV, Shuttle, Pegasus, Taurus, Minotaur, ISTEF, Astrotech, BMRST, Navy, Super Loki and Space X.

The contractor is responsible for providing DoD/USAF Communications Support per CLIN 003 on a Productive Hour Fully Burdened Cost basis.

In performance of these services, the contractor shall:

a. Review KPRD/RD-160 and create support documentation.

b. Assign circuits per requirement document.

c. Perform all necessary steps to maintain circuits and verify services.

d. Provide stand-by support to address any circuit failure or system anomaly.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.2 Cable Plant Services, B.3.3 Transmission Services, B3.4.4 Telephone Services, B.3.8 Timing Services, and B.3.9 Voice Communications.

3.4 Networks, Telephones, and Network Security Perimeter

The services within this PWS section are Baseline requirements (CLIN 001) for GFY 2009 - GFY 2011 only. The Government reserves the right to exercise the CLIN 007-12 and 007-13, *Network Options,* for 3.4.1, *Network Services,* 3.4.2, *Network Security Perimeter Operations,* and 3.4.4, *Secure Remote Access,* prior to the start of GFY 2012 and GFY 2013 respectively. PWS 3.4.3, *Telephone Services,* will remain a Baseline requirement and is not affected by these options. Cabling associated with Network Services will be performed under PWS 3.2 Cable Plant Services. The contractor's responsibility for Cable Plant Services (up to the wall plate) are not impacted by the above.

The contractor is responsible for providing networks, telephones, and the network security perimeter which provides a common shared IT capability to support IT system environments that utilize the Center networks as their primary communications transport service. They also provide the first line of defense of IT resources at KSC, NASA occupied facilities at the CCAFS, and other off-site locations as directed by the COTR.

3.4.1 Network Services

The contractor is responsible for providing the design, installation, operations, maintenance, and sustaining engineering for the assigned institutional networks at KSC and NASA occupied facilities on CCAFS. This support includes the KSC network presence in NASA facilities on Vandenberg Air Force Base (VAFB) and other locations as approved in writing by the CO. The KSC institutional computer network consists of wired and wireless Local Area Network (LAN)/Metropolitan Area Network (MAN), as well as support for Internet Protocol (IP) telephony. Institutional requirements include data necessary for day-to-day business (e.g., e-mail, internet, and work control) and process sensitive elements in support of KSC missions and programs.

The nominal support requirement for this service is 1st and 2nd shift, Monday through Friday, with call-in at other times. Additional support may be required during major events based on scheduled customer requirements and may result in weekend, holiday, and/or 3rd shift work.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for network systems.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Provide Dynamic Host Control Protocol (DHCP) and Domain Name Servers (DNS) services.

d. Develop and deploy a system to manage the end-to-end configuration of assigned network systems by October 1, 2009. The system shall contain a minimum set of information about the physical configuration of the network including Customer Face Plate (CFP) number,

comm. room patches, home runs, circuit number, switch, port, hub and/or router number, building number, and room number(s) of CFP and network devices. The system shall also contain a minimum set of information about the logical configuration of the network including IP address, hardware and/or machine addresses, Virtual LAN (VLAN) data, speed and duplex information. The system shall be capable of retaining historical data on-line for a period of not less than one year. Historical data older than one year shall be archived off-line and be capable of being retrieved within 72 hours when requested. The contractor shall report progress in the Monthly IMCS Technical Operations Review.

e. Maintain the system to manage the end-to-end configuration of assigned network systems described in item d above. Ensure that the stored configuration information accurately reflects the current system configuration and is verified at least quarterly. Verification shall be by means of an automated tool where possible. Where automated validation is not possible, the contractor shall monthly audit a randomly selected, statistically significant, subset of entries in the system. All corrections shall be incorporated within five working days of discovery. The contractor shall report status in the Monthly IMCS Technical Operations Review.

f. Maintain a comprehensive network and IT security documentation database containing the data fields required by ITS-SOP-0016-B, *Subordinate IT Security Plan Template, Requirements, Guidance and Examples*.

g. Support NASA IT security personnel performing IT security functions including the Agency Network Architecture Control Board (NACB) and the Center Network Configuration Board (NCB).

h. Support the design, configuration, operation, and data reporting of special purpose/function IT security sensors/systems used to detect specific events or identify and quantify the presence of IT system vulnerabilities. Maintenance of these special purpose systems will be performed by the contractor once turned over by the Government.

i. Operate and maintain a complete network management system including primary and limited functional backup network operations centers, as well as in-band and out-of-band network management systems. The network management systems shall be capable of monitoring and controlling of remote devices, real-time service utilization and status, monitoring and displaying system performance parameters such as network latency and response, and allow the contractor to identify systems problems and, to the maximum extent possible, resolve them before they impact the customer.

j. Collect and enter DNS, DHCP, and IP address configuration information for KSC into the Agency provided Internet Protocol Address Management system via the Government furnished interface.

k. Grant network access per KDP-P-1444, *KSC Institutional Network Connectivity Procedure*.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.4.1 Network.

3.4.2 Network Security Perimeter Operations

The contractor is responsible for monitoring all network traffic crossing the designated Center ingress/egress points, as well as the instrumented internal backbone locations using the Government defined and provided intrusion detection/monitoring systems. Network Security Perimeter (NSP) operations involve the first line of defense for IT resources and will require near real-time response.

The nominal support requirement for this service is 1st shift, Monday through Friday, and performing remote monitoring with on-call support at all other times. Additional support may be required during major events based on scheduled customer requirements and may result in 2nd shift, 3rd shift, weekend, and/or holiday work.

In performance of the services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for NSP systems.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Report any observed suspicious network protocol/traffic behavior for further investigation and/or the initiation of IT security incident response actions to the KSC Organization Computer Security Official (OCSO) within one hour of detection. This will be accomplished using both the designated intrusion detection and monitoring systems, as well as any other contractor supported systems.

d. Respond to NASIRC bulletins and alerts.

e. Immediately initiate incident response procedures by providing notification to the KSC OCSO when confirmation of suspicious network traffic/protocol behavior is detected and support all follow-on incident response activities.

f. Review NSP logs and provide a daily Network Security Perimeter Report (DRD-TS-01) based on a set of Government defined attributes.

g. Ensure all access to NSP devices is logged, that these logs are reviewed on a daily basis, and that all anomalies are reported to the KSC OCSO in accordance with IT Security requirements.

h. Implement/maintain Government approved system rule set/configuration modifications to the network security perimeter protection systems, including editing of router-based Access Control Lists (ACLs), and keep an accurate record log of all changes made to the system.

i. Retain electronic archival copies of all logs, rule sets, and related NSP configurations. Archival copies will be kept in a geographically separate location from the equipment and will be retained until the next revision is made plus one year with the exception of activity logs that shall be retained for the life of the contract.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.4.2 Network Security Perimeter.

DRDs Referenced in this Section:

Network Security Perimeter Report, DRD-TS-01

3.4.3 Telephone Services

The contractor is responsible for providing the design, installation, operations, maintenance, and sustaining engineering for the assigned telephone systems at KSC and NASA occupied facilities on CCAFS in support of all KSC functions.

The nominal support requirement for this service is 1st shift, Monday through Friday, with call-in at other times. Additional support may be required during major events based on scheduled customer requirements and may result in 2nd shift, 3rd shift, weekend, and/or holiday shift work. Operator services are required Monday-Friday from 6 a.m. to 6 p.m.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for telephone system infrastructure including basic services (operational configuration, engineering and maintenance of analog, digital telephone, and VoIP switching system); and corrective/preventative maintenance of telephone instruments and drops.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Provide end-to-end support equipment and services for moves, adds, and changes (MAC). These services include instrument placement, infrastructure, and other required services to provide telephone-related connectivity within, and external to, the Center. (Note: VoIP users will be allowed to move their VoIP instrument to locations with existing VoIP service.)

d. Provide operator services processing international calls, collect calls, conference calls, other operator-assisted calls, provide directory assistance (DA) service (Locator) and maintain current DA information, and log information on billable calls. The operators shall provide general information in response to public inquiries not requiring referral to External Affairs.

e. Support existing and future VoIP requirements, including VoIP phones (including softphones and WiFi phones), associated call processors, E911 services, and gateway systems.

f. Supply VoIP services to on-site and off-site KSC entities which have supportable LAN services and have been approved by the COTR for VoIP services.

g. Support the VoIP systems interfaces and provide required programming to facilitate connectivity.

h. Provide logging and blocking security services via a telephone firewall. The contractor shall review the logs and make recommendations to identified NASA telecommunications personnel and implement changes and rule-based policies as directed by the COTR.

i. Maintain the E911 switch and ancillary equipment, including the ANI/ALI database and its interfaces with the KSC phone systems.

j. Provide current telephone data for the KSC E911 center ANI/ALI database on a weekly basis. The KSC data shall include the building, room, occupant/assignee, organization and mail code, and directory number(s) for all active ports on KSC. This KSC data, sorted by directory number, shall also be made available electronically to the COTR on a monthly basis.

k. Provide translations and routing for on Center cellular 911 calls and for remotely located (off Center) VoIP 911 calls.

l. Protect the privacy rights of users of the telephone systems.

m. Provide call detail information as requested by the COTR in support of KSC Security, Office of Inspector General (OIG), and KSC Office of Chief Counsel. This information may be required on short notice.

n. Provide Telephone Call Detail Report (DRD-TS-02). The contractor shall provide close to real time access to the telephone call detail database to a very limited number of persons specifically designated by the COTR.

o. Supply operating guides that will walk users through routine operations for their instrument type, including frequently asked questions.

p. Provide voice mail services including recorded announcements, audio and visual indicators of messages waiting retrieval, forwarding capability, broadcast (voice mail lists), 15 minutes of storage standard and 30 minutes as directed, auto dial voice mail caller, auto reply (send message back to voice mail caller), create, delete, and retrieval of messages from any Dual Tone Multi-Frequency (DTMF) phone (internal or external to Center). Retrieval of messages external to the Center shall be accessible via a local Directory Number (DN) and a toll-free number provided by the Government.

q. Implement a Center-wide calling name delivery service by February 1, 2009.

r. Ensure that the following features are active and available to users and are kept at current supportable revision levels including its underlying release software. These features include: call forwarding, transfer, switch conferencing 3 and 6 way, camp on, redial, hold, call park, caller identification (ID), call waiting, message waiting, call pickup, hunt group, speed call, auto dial, caller ID outgoing, and Center-wide calling name delivery.

s. Monitor usage on trunking facilities and notify the Government when usage levels approach levels of service degradation (>P 0.01).

t. Make all telephone system components property of the Government upon delivery or installation.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.4.3 Telephones.

DRDs Referenced in this Section:
Telephone Call Detail Report, DRD-TS-02

3.4.4 Secure Remote Access

The contractor is responsible for providing the design, installation, operations, maintenance, and sustaining engineering for the assigned secure remote access system at KSC. The secure remote access system is a collection of services that provide nearly seamless access to the KSC/NASA IT infrastructure for users from locations external to the Center.

The nominal support requirement for this service is 1st and 2nd shift, Monday through Friday, with call-in at other times. Additional support may be required during major events based on scheduled customer requirements and may result in 3rd shift work, weekend, and/or holiday.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for KSC approved secure remote access systems.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Support the investigation of emerging technologies as they relate to secure remote access.

d. Issue and retrieve remote access devices related to the KSC strong authentication system as directed by the Government.

e. Provide troubleshooting and problem isolation of functions related to secure remote access and the user's system account including password resets, and maintain the relevant KSC strong authentication services system utility support subsystems.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.4.4 Secure Remote Access.

3.5 Imaging Services

The contractor is responsible for providing imaging services which include the operation, maintenance, and sustaining engineering for imaging systems that support operational and institutional requirements at KSC and NASA occupied facilities at the CCAFS.

3.5.1 Surveillance Television

The contractor is responsible for providing surveillance television services for KSC. The surveillance television service requirements include analog National Television Standards Committee (NTSC) Video, High Definition (HD) and Standard Definition (SD) Video, and digitally networked Webcams. These systems are used to visually monitor launch vehicle and payload operational activities and provide facility security.

The nominal support requirement for this service is 24 hours per day, Monday through Friday, with call-in at other times. Additional support may be required during major events based on scheduled customer requirements and may result in weekend or holiday work during any shift.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for surveillance television systems.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Acquire, route, record, playback, and archive video content per operational requirement support documents.

d. Monitor, record, and display signal performance parameters such as adherence to industry video transmission standards, signal level, bit error rates, camera/lens settings, and current distribution configuration to identify system problems before they impact the customer.

e. Repair video and infrared cameras for other KSC contractors.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.5.1 Surveillance Television.

3.5.2 Multimedia Production and Distribution

The contractor is responsible for providing multimedia production and distribution services that are used to meet mission and institutional requirements that include video content creation and editing; image creation and editing; audio processing and editing; and web content creation which includes text, graphics, and video. The multimedia production and distribution service capabilities include distribution of mission-related videos, live shows and other mediums such as live streaming video, audio and video podcasts, DVDs, CDs, screen captures, web and cable TV broadcasting to local KSC, agency-wide, and world-wide news audiences.

The nominal support requirement for this service is 1st shift, Monday through Friday, with call-in at other times. Additional support may be required during major events based on scheduled customer requirements and may result in 2nd shift, 3rd shift, weekend, or holiday work.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for multimedia production and distribution systems in support of video, audio, and web products.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Produce live continuous broadcast quality audio and video coverage for all special events.

d. Acquire, route, record, playback, distribute cable TV, and archive video and audio content per operational requirement.

e. Produce live multi-camera briefings and events including elements such as planning; writing schedules, outlines, treatments, and scripts; directing camera operators, lighting, studio technicians, audio technicians, and graphic and videotape operators; coordinating satellite transmissions, closed captioning, and language translation as required; and integrating remote video and audio sources for transmission and/or distribution.

f. Create, provide, and manage KSC web broadcast events and products for NASA customers and maintain production schedules for deliverables to support launch activities and KSC organizational products.

g. Create audio and video content for the KSC internal, NASA portal, and KSC public websites.

h. Provide content support for NASA launches during processing and launch to include imagery, photographs, employee profiles, and videos during pre-launch, launch, and post-launch activities for east and west coast launches and NASA-KSC special events.

i. Produce and distribute products such as podcasts, webcasts, and employee profiles, in audio and video formats, using storyboard scripts.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.5.2 Media Production and Distribution.

3.5.3 Spacecraft Processing, Launch, and Landing Imaging

The contractor is responsible for providing spacecraft processing, launch, and landing imaging services including SD television (SDTV), NTSC television, and HD television (HDTV) video; high-resolution, high-speed motion film, digital imagery, and IP based imagery; and high-

resolution still photography in support of KSC managed activities. These services are used to provide engineering analysis quality imagery to program operational customers for assessment of vehicle performance, debris issues, and GSE performance. Imagery content includes highly detailed digital still photography of spacecraft and launch vehicle condition prior to launch; fixed still coverage of vehicle and GSE during lift-off and ascent; tracking HDTV and high-speed motion photography of vehicle ascent; digital still photography of vehicle landing; and tracking HDTV and high-speed motion photography of vehicle landing.

The nominal support requirement for this service is 1st shift, Monday through Friday, with call-in at other times. Additional support may be required during major events based on scheduled customer requirements and may result 2nd shift, 3rd shift, weekend, or holiday work

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for processing, launch, and landing imaging systems.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Acquire, route, display, record, playback, transfer digital file, and archive video content per operational requirement support documents.

d. Acquire, process, duplicate, archive in cold storage, and distribute film and digital content per operational requirement support documents.

e. Acquire, label, archive, retrieve, and distribute high-resolution digital images to support comparison with images obtained through on-orbit inspection. Validate all Baseline Configuration Imaging (BCI) imagery to ensure the accuracy of the spatial coverage of the subject.

f. Operate, maintain, and perform sustaining engineering on fixed film cameras, fixed mounts, video cameras, ancillary lenses, local and remotely operated mobile tracking mounts, transportation capability for mobile assets, environmental and explosion proof camera/lens housings, and mobile personnel control rooms.

g. Ingest non-KSC generated imagery files into the archive and distribution system.

h. Operate, maintain and perform sustaining engineering on archival and distribution systems supporting imagery content distribution to Johnson Space Center (JSC), KSC, and Marshall Space Flight Center (MSFC) program engineering customers. Imagery content includes physical film distribution and electronic data transfers under extreme time constraints.

i. Monitor, record, and display signal performance parameters such as adherence to industry video transmission standards, signal level, bit error rates, camera/lens settings, and image quality to identify system problems before they impact the customer.

j. Provide an Engineering Imagery Acquisition Distribution Document (EIADD) (DRD-TS-03) which details how the contractor will support each program imaging requirement. An EIADD shall be generated for every mission operation or major test. At a minimum, EIADDs are generated for Shuttle TCDT, Shuttle Launch, Shuttle End of Mission (EOM), and Expendable Launch Vehicle (ELV) launches.

k. Provide an Engineering Imagery Post Operation Report (DRD-TS-04) for Processing, Launch, and Landing Imaging performance to include detailed failures reports, corrective actions taken, customer data product quality and data product delivery times, general system performance and condition, and any other operational issues or concerns. An individual report is to be generated at 2 days, 10 days, and 20 days post operation.

l. Provide support to the Government imaging analysis team.

m. Archive processing, launch, and landing imagery.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.5.3 Spacecraft Processing, Launch, and Landing Imaging.

DRDs Referenced in this Section:

Engineering Imagery Acquisition Distribution Document, DRD-TS-03
Engineering Imagery Post Operation Report, DRD-TS-04

3.5.4 Non-Engineering Imaging

The contractor is responsible for providing non-engineering imaging services which are used in support of NASA and USAF programs, missions, and institutional activities.

The nominal support requirement for this service is 1st shift, Monday through Friday, with call-in at other times. Additional support may be required during major events based on scheduled customer requirements and may result in 2nd shift, 3rd shift, weekend, or holiday work.

In performance of these services, the contractor shall:

a. Provide professional-quality motion picture, still photographic, digital, and video products and services. In some cases digital products are required for immediate distribution to world wide news media organizations.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Operate, maintain, and perform sustaining engineering for motion pictures, still photography, and digital products archives.

d. Provide customer service interface, digital video production programming development, editing, printing, distribution, duplication, dubbing, transferring, archiving, optics and photo equipment repair and maintenance, broadcast and HD video productions, and digital still image services including scanning and digital image manipulation, and compact disc (CD)/Digital Versatile Disc (DVD) archiving.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.5.4 Non-Engineering Imaging.

3.5.5 Department of Defense (DoD)/United States Air Force (USAF) Multimedia (CLIN 004)

The contractor is responsible for providing image acquisition, processing, and finishing of multimedia end products to DoD/USAF customers per funded USAF Delivery Order or Government Purchase Card (GPC) account. The contractor shall notify the customer of impending work stoppage prior to exhausting funding (DoD/USAF price list at ID/IQ Pricing Schedule).

In performance of these services, the contractor shall:

a. Provide pricing and services for the initial Government Catalog of DoD/USAF Multimedia Services and Prices. The contractor shall provide updates to the Catalog to the USAF CO when new services are made available. The contractor shall provide complete work order documentation to include the customer's completed Multimedia Request (AF Form 833), the contractor's DoD Multimedia Photographic Acquisition Disposition Document (DRD-TS-05), the contractor's DoD Multimedia Performance Production Report (DRD-TS-06), and invoicing details, with copies to the Eastern Range Multimedia Manager, no later than 30 calendar days after completed delivery order or GPC purchase.

b. Provide DoD/USAF customers image acquisition services. Image acquisition of covered events shall be funded on a not-to-exceed charge, based on listed prices per unit charge for requested camera(s), set up, launch slip or scrub, operation, and retrieval. The image acquisition process shall be capable of operating and maintaining the following systems in accordance with KSC and Range Configuration Controls: high-resolution still photography, still and motion film photography, and NTSC and HD video handheld or mounted on available Optical Instrumentation Systems, metric and non-metric Universal Camera Sites. The contractor shall have the option to use any mix of available Government-furnished equipment supplemented with contractor-owned equipment and accessories. The process may require the contractor to provide supplementary lighting, protective camera boxes, remote or automated controls, optical tracking mounts, and Range Operations Control Center (ROCC) console manning during a supported event. Unit charges shall include consideration for planning, preparation, operations and maintenance, and all overhead and applicable fees within the posted charges in the DoD/USAF Pricing Schedule.

c. Provide DoD/USAF customers digital image processing, camera film processing, film-to-digital transfer, and master video tape/digital file storage, per funded request, from a pre-priced list of processing services. Listed services shall include charges, as required, for digital image downloading, adjusting, editing, and metadata management by a fixed-price rate per available item or service unit.

d. Provide DoD/USAF customers original materials, end products, and copies from the pre-priced listings per funded request. End products shall include, as requested, photographic paper prints, film, video cassettes, and digital files on CD, DVD, electronic file transfers, and customer-provided digital storage devices. Material and end product pricing for DoD/USAF customers shall include overhead fees for proper image file management (image file numbering, labeling, storing, purging and archiving) as defined by the Government.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.5.5 DOD Technical Multi-Media Support.

DRDs Referenced in this Section:

DoD Multimedia Photographic Acquisition Disposition Document, DRD-TS-05
DoD Multimedia Performance Production Report, DRD-TS-06

3.6 Graphics Services

The contractor is responsible for providing graphics services which include operations, maintenance, and sustaining engineering of the graphics production systems to produce quality graphics products using traditional techniques, as well as electronic creation and manipulation.

The nominal support requirement for this service is 1st shift, Monday through Friday. Additional support may be required during major events based on scheduled customer requirements and may result in 2nd shift, 3rd shift, weekend, or holiday work.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering in graphics illustration and document composition.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Prepare, edit, and provide Portable Document Format (PDF) files for electronic publications.

d. Produce graphics illustrations such as art renderings, cartooning, logo design, and technical drawings.

e. Develop optimized graphics and interactive media suitable for web pages.

f. Perform photo-retouching and editing on still photographs.

g. Prepare graphics elements in support of Audio/Visual (A/V) and Presentation Support Services (PWS 3.7).

h. Design and prepare trade show displays, posters, charts, graphs, and diagrams.

i. Produce graphics support elements such as badges, certificates, labels, lettering, name plates, tent cards, placards, signage, and sign-out boards.

j. Provide graphics support processes and capabilities for dry mounting, laminating, matting, framing, and scanning of graphic elements.

k. Perform document file conversions to enable electronic publishing by the KSC duplicating facility and Government Printing Office (GPO) contractors.

l. Comply with the Agency's Communications Material Review (CMR) system guidelines and specifications.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.6 Graphics.

3.7 Audio/Visual (A/V) and Presentation Support Services

The contractor is responsible for providing A/V and presentation support services that encompass the design, installation, operations, and maintenance capability for various A/V information systems, as well as operational manuals and system configuration. A/V services and products also include creation, assembly, editing, and distribution of content.

The nominal support requirement for this service is 1st shift, Monday through Friday. Additional support may be required during major events based on scheduled customer requirements and may result in 2nd shift, 3rd shift, weekend, or holiday work.

In performance of these services, the contractor shall:

a. Operate, maintain, and provide sustaining engineering for the existing A/V and presentation systems.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Create, assemble, and prepare physical and electronic presentation content for distribution. Identify products created with appropriate searchable data to enable future retrieval.

d. Operate and maintain the KSC Video Teleconferencing System (ViTS) rooms and the portable ViTS equipment.

e. Support teleconferencing services and techniques such as video-over IP, desktop teleconferencing, and any other approaches developed under this contract.

f. Provide audio visual presentation, IT support, and sound reinforcement services to NASA, support contractors on KSC, and NASA supported off-Center events.

g. Provide projectionist support for viewgraph, motion picture, slide projector, video projection equipment, and A/V presentations as requested for the following locations: KSC Auditorium (M7-351), the Operations and Checkout (O&C) (M7-355) Mission Briefing Room, Center Director's conference room (HQs) (M6-399), and the Operational Support Building Number 2 (OSB-2) Conference Room.

h. Install and maintain A/V equipment in approximately 25 KSC conference rooms. Organize, prioritize, and schedule the work to be done such that conference room down-time is minimized.

i. Operate an audio/visual equipment loan pool to provide short-term equipment loans to KSC and on-site contractor personnel for on-site and off-site use.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.7 A/V and Presentation Services.

3.8 Timing Services

The contractor is responsible for providing timing services including operations, maintenance, and sustaining engineering of systems that accurately generate and display time to support launch count-down and precision frequency generation and distribution to meet operational and institutional requirements at KSC and the NASA occupied facilities at the CCAFS.

The nominal support requirement for this service is 1st shift, Monday through Friday, with call-in at other times. Additional support may be required during major events based on scheduled customer requirements and may result in weekend, holiday, and/or 2nd or 3rd shift work.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for the timing service capable of generating and routing of Time, Countdown, and precision frequency signals.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Monitor, record, and display signal performance parameters such as output signal levels, modulation, and drift to allow the contractor to identify systems problems and, to the maximum extent possible, resolve them before they impact the customer.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.8 Timing.

3.8.1 Time Services

The contractor is responsible for providing time services that generate, distribute, and display time signals correlated to Naval Observatory Standard Time through Global Positioning System (GPS).

In performance of these services, the contractor shall:

a. Generate, distribute to specified locations, and display, at a minimum, timing signals to include Greenwich Mean Time (GMT), local, and test times.

b. Support time distribution standards to include Inter-Range Instrumentation Group (IRIG)-A, IRIG-B, IRIG-D, IRIG-E, IRIG-H, NASA 36-Bit Modulated, and Network Time Protocol.

3.8.2 Countdown Services

The contractor is responsible for providing countdown services that receive, regenerate, distribute, and display countdown signals from multiple operations including vehicle launch, vehicle processing, payload operations and tests.

In performance of these services, the contractor shall:

a. Receive, generate, regenerate, distribute, and display, at a minimum, countdown signals to include T-time, L-time, and various hold/hold-remaining times.

b. Support countdown distribution standards to include, at a minimum, Merritt Island Launch Area (MILA)-36bit, IRIG-CS3, and IRIG-CS5.

3.8.3 Frequency Services

The contractor is responsible for providing frequency services, which provide multiple precision frequency signals for use in other areas such as calibration labs, SONET, and network transmission systems.

In performance of these services, the contractor shall:

a. Generate and distribute multiple precision frequency signals for external customers and internal communications systems.

b. Generate, regenerate, and distribute at a minimum frequency signals to include 1pps, 1 MHz, 5 MHz, 10 MHz, 1.54 Megabits per Second (Mbps), and 2.048 Mbps.

3.9 Voice Communications Services

The contractor is responsible for providing voice communications services which consists of operating, maintaining, and providing sustaining engineering for the voice communication systems to insure timely and dependable voice communications to meet operational and institutional requirements at KSC and the NASA occupied facilities at the CCAFS, Continental United States (CONUS), and Transoceanic Abort Landing (TAL) sites and Constellation recovery sites.

The nominal support requirement for these services is 24 hours per day, Monday through Friday, with call-in at other times. Additional support may be required during major events based on scheduled customer requirements and may result in weekend or holiday work.

In performance of these services, the contractor shall:

a. Provide voice communications services for launch and landing at contingency landing sites in the continental US sites and TAL sites.

b. Provide voice communications systems engineering services at the Shuttle Processing Area (SPA) at the Dryden Flight Research Facility (DFRF) through the end of the Shuttle program.

c. Change out circuit cards in the NASA Integrated Services Network (NISN)/NASA Communications Network (NASCOM) owned equipment and assist in the upgrades, additions, and deletions to the NASCOM services.

d. Receive and stage NISN provided spares and ship defective cards back to NISN (NASCOM).

e. Provide engineering and technical support to the Federal Aviation Administration (FAA) for their circuits at KSC and CCAFS.

3.9.1 Paging and Area Warning System Services

The contractor is responsible for providing Paging and Area Warning System (PAWS) services, which are designed to provide emergency, operational, and administrative announcements to KSC personnel. The PAWS services provide flashing beacons and strobe lights in high noise areas in addition to audio announcements.

In performance of these services, the contractor shall;

a. Operate, maintain, and perform sustaining engineering of the existing PAWS and any ancillary devices.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Perform periodic system tests and install additional speakers and beacons to ensure adequate coverage.

d. Provide system resources to Government specified users who will perform the announcements.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.9.1 Paging and Area Warning System (PAWS).

3.9.2 Radio Services

The contractor is responsible for providing radio services; providing land mobile, satellite, and aircraft radios. These are used to support institutional operations, spacecraft and payload processing, and Space Shuttle TAL and Constellation recovery sites operations. Institutional operations include security, fire, medical, safety, base support, public affairs, employee welfare, and maintenance operations.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering of mobile, portable, and fixed radio systems and interfaces, communications systems on the NASA Convoy Commander vehicle, backup convoy vehicle, and astronaut transport vehicle, helipad landing pad system, and the trunked radio monitoring system.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Support the Emergency Operations Center radio and satellite phone integration.

d. Maintain an online database of individual radio information including user name, organization, property tag number, mail code, code plug configuration, and maintenance data.

e. Program and maintain Government-furnished radios and trunking capable scanning receivers.

f. Integrate the trunked radio system controller with the trunked radio infrastructure sites at CCAFS and Patrick Air Force Base (PAFB); however, maintenance and operation of those sites is not the responsibility of the contractor.

g. Provide capabilities to mount and service antennas and associated cable and equipment.

h. Provide personnel to serve as the Commercial Driver’s Licensed (CDL) driver for NASA Convoy Commander vehicle operations.

i. Acquire, update, and maintain software licensing, maintenance, and system monitoring agreements and contracts for the radio equipment.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.9.2 Radio Systems.

3.9.3 Operational Intercommunications System (OIS)

The contractor is responsible for providing OIS analog and digital, multi-channel, voice conferencing communication services for the LC39 area and the Industrial area, with a common channel interface to allow intercommunication.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for the OIS systems.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Provide headsets and handsets including distribution, tracking, and repair.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.9.3 OIS.

3.9.4 Audio Distribution Services

The contractor is responsible for providing audio distribution services which consists of 4-wire/2-wire audio bridges used to distribute mostly non-OIS circuits to required operator locations and line conditioning equipment such as amplifiers, attenuators, filters, and transformers.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for the audio distribution system.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.9.4 Audio Distribution System.

3.9.5 Voice Recording Services

The contractor is responsible for providing digital voice record and playback capability of any of the 1024 OIS-D channels, radio nets, paging circuits and certain telephones including HiPath digital instruments in the Launch Control Center (LCC), crawler transporter OIS-Q, E 911, and the Transportable Communication System (TCS).

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for the digital record and playback system.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Provide voice duplications delivered electronically in the form of computer files (such as Ogg Vorbis files) or physical duplications made available in the format requested by the customer.

d. Use and maintain an ACL for these sources, detailing which individuals or groups shall have access to each recorded source.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.9.5 Voice Recording System.

3.9.6 Fixed Audio Systems

The contractor is responsible for providing fixed sound re-enforcement to various location requested by the Government.

The nominal support requirement for this service is 1st shift, Monday through Friday, with call-in at other times. Additional support may be required during major events based on scheduled customer requirements and may result in 2nd or 3rd shift or weekend work.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for the fixed audio systems.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Provide fixed and portable audio support for various locations and events such as launches, landings, and special events.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.9.6 Fixed Audio Systems.

3.10 Electromagnetic Measurement and Analysis Services

(Electromagnetic Measurement and Analysis services will be incorporated into the IMCS baseline at the start of GFY 2013. The Government reserves the right to exercise the CLIN 006 - EML Option prior to the start of GFY 2010. If exercised, the Government will incorporate the associated costs of the EML Option into CLIN 001 and CLIN 005.)

The contractor is responsible for providing electromagnetic measurement, analysis, and monitoring services which includes electromagnetic compatibility testing, frequency control and analysis, and associated electromagnetic measurement and analysis services at KSC, CCAFS, PAFB, and off-site facilities. Services are provided to the DoD/USAF as specified in the KCA-1323, *Joint Operating Procedure (JOP) Between 45th Space Wing (45 SW) and NASA-KSC for Electromagnetic Laboratory (EML) Services*.

The nominal support requirement for this service is 1st shift, Monday through Friday, with call-in at other times. Additional support may be required during major events based on scheduled customer requirements and may result in weekend, holiday, and/or 2nd and 3rd shift work.

In performance of these services, the contractor shall:

a. Perform operations, maintenance, and sustaining engineering for all systems and equipment associated with the EML and the elements of the Reradiating Antenna System (RAS).

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Perform electromagnetic interference (EMI) testing and analysis including electromagnetic signal level investigations, power line transient measurements, Radio Frequency (RF) transmission line characteristics, and fault detection.

d. Perform electromagnetic compatibility investigations including susceptibility of equipment to transient environments, radiation levels emanating from equipment, and susceptibility of equipment or systems to radiated fields.

e. Measure electromagnetic field intensities and power densities, and empirically verify antenna parameters at KSC, CCAFS, PAFB, and off-site facilities.

f. Perform tests of ground support equipment, unintentional radiators, and intentional radiators such as two-way radios, wireless access points (including Personnel Area Network, LANs, and MANs), mobile telephones, wireless Personnel Data Assistants (PDAs), Radio Frequency Identification (RFID) systems, telemetry links, radar transponder beacons, radars, transmitting key fobs, satellite communications systems, and broadcast transmitters.

g. Produce detailed written reports of all measurements or tests. Reports shall include unique identifiers of the Equipment Under Test (EUT) and test equipment, currency of the test

equipment calibration, names of individuals performing the test, range conditions, goals of the test, detailed procedure steps, and conclusion.

h. Perform launch site RF surveillance and recording, per customer requirements, during all KSC and ER launches to ensure RF sources do not interfere with launch operations.

i. Locate, identify, and resolve Radio Frequency Interference (RFI) problems affecting assets on KSC and the ER. The contractor shall maintain an online database recording the details of RFI reports and the steps taken to resolve the RFI.

j. Provide electronic access to the RFI database for NASA personnel as authorized by the COTR.

k. Ensure that all personnel requiring access to classified information have a minimum of a Secret Security clearance.

l. Perform radar transponder beacon parameter measurements for all launch vehicles at KSC and the ER. The measurement results shall be provided to KSC and ER radar operators to ensure accurate vehicle tracking. The beacon readout system shall be operated with attention to the restrictions of the Homeland Security Presidential Directive 12 (HSPD-12).

m. Perform interference analysis and impact assessments for new emitters operating at KSC and ER per customer request.

n. Design, fabricate, and test systems including special purpose devices such as antennas, transmitters, receivers, control equipment, and RF filters.

o. Participate in pre-rollout and pre-launch walk-downs of launch pads whose structure supports one or more RAS antennas.

p. Mount and install antennas, feed-lines, and pressurization equipment associated with the RAS.

q. Produce detailed reports on RAS antenna gain, cable losses, test frequencies, and free space path loss between antennas.

r. Maintain and update a RAS User's Guide and make the Guide available to all spacecraft and payload customers for test planning.

s. Utilize an automated monitoring system to continuously monitor the KSC and ER RF environment. Distribute the captured monitoring data to authorized individuals on a daily basis and keep an archive of the data.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.10 Electromagnetic Measurement and Analysis.

3.11 Publications Services

The contractor is responsible for providing publications created at KSC which require a range of writing and editing styles, from technical to journalistic, as well as publication capabilities that range from hard copy to web-based releases.

The nominal support requirement for this service is 1st shift, Monday through Friday. Additional support may be required during major events based on scheduled customer requirements and may result in weekend, holiday, and/or 2nd and 3rd shift work.

In performance of these services, the contractor shall:

a. Provide technical writing and editing services required to produce scientific and technical reports, mission support documents, operational plans and procedures, communication plans, internal and external communications to stakeholders, systems briefs, high profile speeches, scripts, newsletters, photo captions, news releases, press kits, fact sheets, information summaries, brochures, presentations, manuals, journal articles, and any other related documentation printed, electronic, or video used for internal and external dissemination including off-site events.

b. Edit documents based on the following guidelines:

   i. *The Gregg Reference Manual* (published by McGraw-Hill Irwin)

   ii. *The NASA Publications Guide for Authors* (NASA-SP-2005-7602 (Rev. 1)) developed specifically for editors and writers

   iii. NASA-SP-7084

   iv. NPR 2200.2B

   v. *Merriam Webster's Collegiate Dictionary*

   vi. The United States GPO Style Manual (International Standard Book Number (ISBN) 0-16-050082-6)

   vii. Associated Press Style

   viii. Other references as determined by the COTR.

c. Assist authors of Scientific and Technical Information (STI) in complying with NASA and KSC standards for publication of manuscripts.

d. Ensure that all submitted written and edited material is in compliance with the current NASA style requirements such as the Communication Materials Review (CMR) style guides and templates. Assist in the processing and publishing of content through the

NASA Content Management System and applying all Portal specific guidelines and standards.

e. Write, edit, and produce KSC recurring publications.

f. Prepare, edit, and provide electronic and camera-ready hard copy for publications that will be sent to GPO contract printer.

g. Provide publication materials to the External Relations Media Reference Library.

h. Prepare narratives in support of web pages and video streaming activities.

i. Perform script writing for web cast development and production broadcast.

j. Populate and update KSC's external and mission web sites with KSC activities by uploading and posting web-related products including elements such as snippets, written features, video features, podcasts, photo galleries, photos, biographies, press releases, status reports, NASA facts, related links, launch/landing schedules, and coverage of all NASA launches starting with processing through end of mission.

k. Produce status updates for web release. Launch Countdown updates shall begin six hours prior to launch. Mission status updates shall be produced throughout the mission.

l. Assemble, edit, and disseminate electronic versions of KSC Daily News no later than 7 a.m., Monday through Friday, and provide updates throughout the day as required.

m. Respond to public inquiries in accordance with KSC guidance. Develop content for opinion surveys. Maintain and update database of approved answers to most frequently asked questions and post and keep current in web-based file.

n. Categorize, edit, and upload public submissions, and develop topical question lists and coordinate reviews with program participants in Question Boards. Prepare Answer Board transcriptions.

o. Use writing, editing, and graphics styles appropriate for the type of publication or product and audience.

p. Update and maintain an area phonebook to include white, yellow, and blue pages containing KSC assigned personnel and facilities located at KSC and CCAFS for annual publication and printing and web posting.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.11 Publications Services.

3.12 Printing, Reproduction, and Microimaging Services

The contractor is responsible for providing printing, reproduction, and microimaging services which includes printing/duplicating, color copying, engineering drawing reproduction, multicolor digital printing, aperture card plotting, document scanning, and CD- Read-Only Memory (ROM) mastering.

The nominal support requirement for this service is 1st and 2nd shift, Monday through Friday. Additional support may be required during major events based on scheduled customer requirements and may result in 2nd shift, 3rd shift, weekend, or holiday work.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for printing, reproduction, and microimaging services.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Coordinate with the KSC Printing Management Officer on jobs that require printing by the GPO contract.

d. Maintain and provide customer and workload accountability using the Government-furnished work control system.

e. Meet printing quality standards of GPO Publication 310.1, Level III quality standards for color copying, and Level IV, quality standards for printing/duplicating.

f. Provide Center-wide duplicating and color copying.

g. Electronically receive and print Launch, Landing, Orbiter Processing, Payload OMIs, and Integrated Control Schedules for mission processing.

h. Electronically receive from the mainframe and print NASA personnel documentation, Shuttle, payloads, and NASA Equipment Management System (NEMS) reports.

i. Provide electronic document distribution.

j. Provide remote mainframe computer printing and document finishing.

k. Provide engineering drawing reproductions from originals, electronic media, and microfilm.

l. Provide multi-color digital printing including folding and document finishing, and provide reproductions.

m. Provide aperture card and microfiche prints.

n. Prepare requisitions/print orders for commercial printing requirements through the GPO and coordinate approval through the KSC Printing Management Officer.

o. Maintain an up-to-date database of GPO printing orders and a hard copy of all GPO orders, by program and year.

p. Support online printing request system which accommodates a variety of electronic formats and file types, including images and drawings, in any requested size.

q. Provide document conversion.

r. Provide optical media mastering and duplicating.

s. Provide scanning and indexing of documents for placement on film, optical media , fileservers, or TechDoc for web access.

t. Produce 35 millimeter (mm) aperture cards of engineering drawings.

u. Operate and maintain the Computer Output Laser Disk (COLD) System.

v. Provide microform products services such as printing and duplicating of 35mm aperture cards.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.12 Printing, Reproduction, and Microimaging Services.

3.13 Engineering Data Center

The contractor is responsible for providing Engineering Data Center (EDC) support services which includes operating, maintaining, and sustaining engineering of an on-site repository for hardcopy, microform, and electronic drawings and release authority for facility and ground support documentation.

The nominal support requirement for this service is 1st shift, Monday through Friday, except weekends and contractor holidays. Additional support may be required during major events based on scheduled customer requirements and may result in 2nd shift, 3rd shift, weekend, or holiday work.

In performance of these services, the contractor shall:

a. Operate, maintain, and perform sustaining engineering for Engineering Drawing Original Repository, Technical Records Center.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to extend and/or enhance existing services.

c. Manage and control records stored in environmentally controlled storage areas.

d. Provide engineering technical records management to transition both physical and electronic records to the Federal Record Center (FRC) or the NARA.

e. Provide microform products services such as encoding, interpreting, and duplicating of 35mm aperture cards.

f. Provide research and reproduction services to walk-in customers and assist with capturing and fulfilling requests.

g. Provide Computer Aided Design (CAD)/Computer Aided Engineering (CAE) software licensing and configuration for viewing and plotting of electronic digitized raster/vector images of engineering documentation.

h. Officially release facilities and ground support equipment documentation via Document Release Authorizations and input tracking information such as drawing numbers assigned, data released, and data received into the CMDS.

i. Receive, manage, store, and distribute officially released engineering drawings, associated technical documentation, and standardization documentation, in hardcopy format and native file electronic media format.

j. Maintain a central microform/imaging repository for Government released drawings, including duplicate microforms as required for viewing and printing.

k. Maintain legacy master microform aperture card file and microform files and convert to electronic format.

l. Validate documentation and maintain master reproducible drawings and aperture cards, as required.

m. Maintain a searchable database and integrate with TDSearch search infrastructure to facilitate remote retrieval of drawings within EDC. Drawings shall be in electronic PDF format and available through TechDoc.

n. Make available on a web-based system documentation determined not to be Sensitive But Unclassified (SBU), Export Controlled, or Classified .

o. Convert legacy documentation to electronic format and ingest into the searchable database upon request.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.13 Engineering Data Center (EDC).

3.14 Library Services

The contractor is responsible for providing library services which include reference services, acquisitions, cataloging/processing, circulation, publications, KSC archives, online reference service, and STI program support. Library services are provided at the Main Library, Law Library, and External Relations Media Reference Library. These services are available to both Government and contractor personnel.

The nominal support requirement for this service is 1st shift, Monday through Friday.

In performance of these services, the contractor shall:

a. Maintain library shelves and currency of library materials; maintain records of KSC Library holdings in the Agency-wide integrated library system and Online Computer Library Center (OCLC), library Internet pages, or local databases; evaluate and catalog archival materials; maintain a physical shelf list of all library holdings; and prepare library materials to be bound.

b. Maintain the Law Library by receiving, updating, filing, shelving, and posting revisions. Perform shelf maintenance, indexing, and labeling, to support efficient access of reference materials by legal staff.

c. Order and acquire library and office copy materials including archival material, books, specifications, standards, serials, documents, photographs, interlibrary loans, and other media necessary to meet information requirements of library patrons.

d. Catalog and process library and office copy materials in accordance with Anglo-American Cataloguing Rules (AACR2) and Library of Congress Classification Schedules.

e. Circulate library and office copy materials; maintain records on automated circulation, document distribution, and serials management systems. Provide employee exit clearances.

f. Provide STI for placement on NASA STI homepage.

g. Prepare and issue annual indexes and publications including Index of KSC Specifications and Standards, Index to the Spaceport News, and the Annual Chronology of KSC and KSC Related Events (to be issued no later than the 10th working day of February).

h. Provide online access to the NASA library system electronic catalog, KSC Library CD-ROMs, and the STI program systems.

i. Acquire serials and publications for KSC in both electronic and print format.

j. Provide and maintain on-site distribution and repository of external mission programs documentation.

k. Provide support to KSC history projects, as requested by the Government. This support shall include oral history interviews, history funded research, support to history contractors, visiting summer historians, and other special projects. Serve as primary point of contact and coordinate history-related matters. Identify and develop new historical materials for long-term archiving.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.14 Library Services.

3.15 Maximo Application Support Services

The contractor is responsible for providing Maximo application support as a Center-wide service to institutional contracts. Maximo application hosting is provided in PWS 3.1.1, Data Center Operations as stated in Appendix 7.

The nominal support requirement for this service is 1st shift, Monday through Friday.

In performance of these services, the contractor shall:

a. Define workflows to customer requests.

b. Create and modify screen views per customer specification.

c. Create and manage list values per customer specification in accordance with the Maximo control board.

d. Create and maintain Maximo reports per customer specification.

The current systems that support these services are referenced in Appendix 8 - *Current Systems Descriptions* – B.3.1.1 Data Center Operations.

3.16 Forms Services

The contractor is responsible for providing forms services which include analysis, design, and maintenance of hardcopy and electronic forms, managing a forms repository, and maintenance of forms inventory.

The nominal support requirement for this service is 1st shift, Monday through Friday. Additional support may be required during major events based on scheduled customer requirements and may result in 2nd shift, 3rd shift, weekend, or holiday work.

In performance of these services, the contractor shall:

a. Operate and maintain the Center electronic forms program consisting of a KSC website, repository, and database which provides user access to all electronic forms. Maintain an online list of forms available in hard copy format only.

b. Develop, acquire, and disseminate Government and contractor forms (hardcopy and intelligent electronic) to meet customer requirements.

c. Maintain minimum levels of forms and publications, and requisition through in-house, GPO service, and other Government agencies' forms and publications.

d. Assign, revise, and maintain form numbers and revision date on the forms.

e. Receive, store, and issue blank forms and publications, fill orders, and accommodate requests for stocked forms and publications.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.16 Forms Services.

3.17 IT Security Services

The contractor is responsible for providing support as Subject Matter Experts (SME) in the area of IT Security to the KSC CIO and IT Security Office in accomplishing Agency and Federal mandates and initiatives. This includes reviewing IT security documentation of various KSC systems and informing the customer of changes to Agency and Federal mandates and initiatives. This support is in addition to the functions that the IMCS contractor is responsible for with regard to securing the systems and data that the IMCS contractor utilizes and maintains/operates in performance of this contract.

The nominal support requirement for this service is 1st shift, Monday through Friday. Additional support may be required during major events based on scheduled customer requirements or emergency call-ins and may result in 2nd shift, 3rd shift, weekend, or holiday work.

In performance of these services, the contractor shall:

a. Perform IT security scans, incident response functions, system and log monitoring, and security patch and update identification.

b. Conduct network vulnerability scans on systems in the KSC assigned Internet Protocol (IP) address space and submit a report on the vulnerabilities identified with their associated severity on a quarterly basis to the KSC IT Security Office. This includes the completion of periodic "war driving" remote scans to detect unauthorized or insecure Wireless Networks connected to the KSC network environment.

c. Review requests for network access to ensure appropriate controls and security documentation have been completed per Center-defined process prior to granting network access.

d. Conduct initial vulnerability scans on new systems requiring network access for new customers and substantial moves/adds/changes involving existing customers.

e. Support audits, investigations, emergency corrective actions, and respond to IT Security related data calls initiated by the Office of Inspector General (OIG), OMB, GAO, Federal Bureau of Investigation (FBI), Center's IT Security Manager, CIO; Chief Counsel; Head of Human Capital, or others as required by the system owner, Organizational Computer Security Official (OCSO) or COTR.

f. Review and evaluate various NASA and contractors' IT security documentation packages and document recommended changes necessary to comply with latest IT security requirements as requested by the NASA KSC ITSM.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.17 IT Security Services.

3.18 Center-Managed Outreach Services

The contractor is responsible for supporting KSC in providing various products and services that help disseminate information about NASA's programs and activities. These products and services allow interaction with the media and the public in general.

The nominal support requirement for this service is 1st shift, Monday through Friday. Additional support may be required during major events based on scheduled customer requirements and may result in 2nd shift, 3rd shift, weekend, or holiday work.

In performance of these services, the contractor shall:

a. Select, package, and mail out informational literature and invitations in various media forms in response to written requests from KSC, other NASA Centers, and the general public.

b. Develop and conduct customer satisfaction surveys with stakeholders, to include recommendations for improvement.

c. Provide escorts and tours for news media, Very Important Persons (VIPs), and other visitors, and assist in preparing news, education, and guest activities.

d. Maintain a record of requests and the disposition of requests for information.

e. Maintain inventories of educational and public informational publications and products in electronic and hard copy form.

f. Develop and maintain mailing lists and labels.

g. Provide official center support to distribute material in response to specific requests.

h. Provide imagery and multimedia products to news media and other customers at the KSC News Facility. These functions include customer service, research, cataloging and indexing, filing, records maintenance, order processing and shipping, and inventory management.

i. Provide support for the creation, development and coordination of new NASA-KSC exhibits and display content.

j. Perform exhibit maintenance and storage.

k. Perform transcription of selected pre-recorded and live events.

l. Respond to Fan Mail.

The current systems that support these services are referenced in Appendix 8 – *Current Systems Descriptions* – B.3.18 Center-Managed Outreach Services.

4.0 Task Order Services/IDIQ (CLIN 002)

The contractor is responsible for providing Task Order services which support the development, evaluation, implementation, and activation of one-of-a-kind or next-generation communications and information technology capabilities and major upgrades. These upgrades range from providing a new building activation to complete system replacement Center-wide. Some known examples of this during the contract will include adding communication systems to the new Mobile Launcher (ML), replacement of OIS-D, replacement of the KSC radio system and the addition of systems at the pads that do not exist today. These services include efforts beyond PWS Sections 1-3 that are not included in those Sections. These efforts shall be managed and performed by the contractor as described under individual task order agreements with the Government.

In performance of these services, the contractor shall:

a. Develop new technology for application to information management and communications system operations.

b. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to add a system or a wholesale replacement of a system described in Appendix 8, Current System Descriptions.

c. Perform installation design, procure, and install new cabling, equipment, and associated hardware and software to activate new facilities.

d. Provide resources to support the evaluation, implementation, and activation of new information and communications technologies.